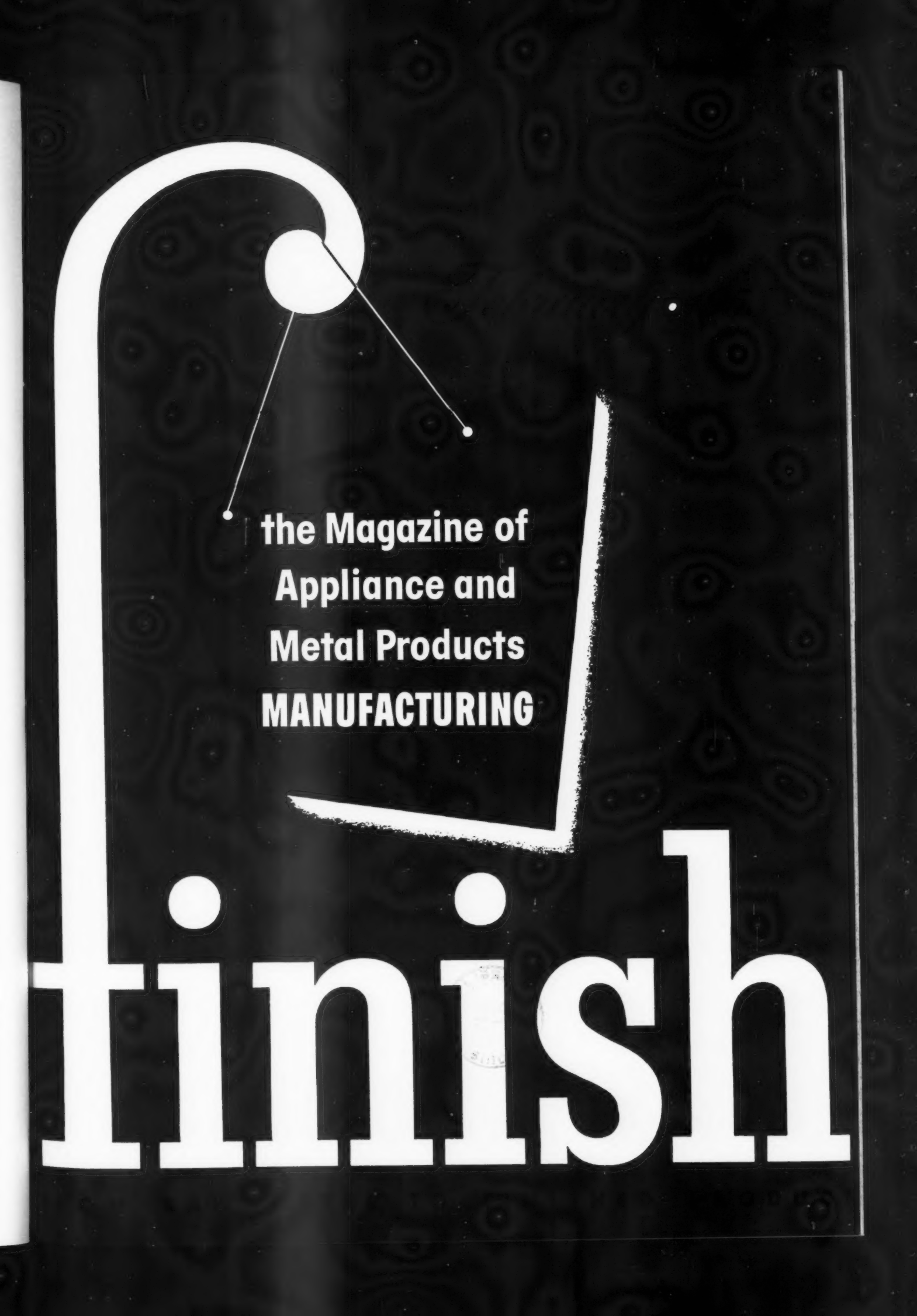
the Magazine of
Appliance and
Metal Products
MANUFACTURING
finish

Could the answer to your problem be

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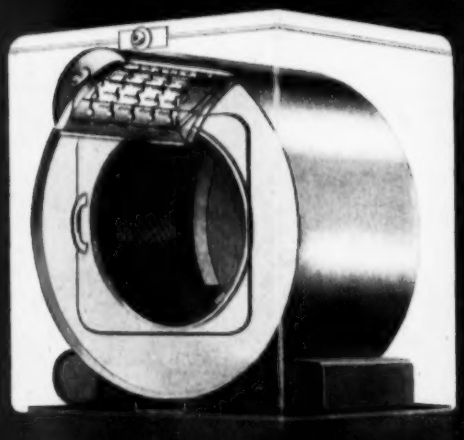

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OR THIS ROASTER UNIT?

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Ferro units are long-lived and dependable. Only highest grade nichrome resistance wire, steatite insulators, cold-rolled steel go into them. And—thanks to Ferro's exclusive "floating" construction, Ferro units can expand and contract over thousands of heating cycles without distortion.

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Regardless of your stamping requirements, New Monarch's 43 years of proved skill in the die and stamping field, together with their undeviating dependability for quality, accuracy and service, make them your logical source of supply.

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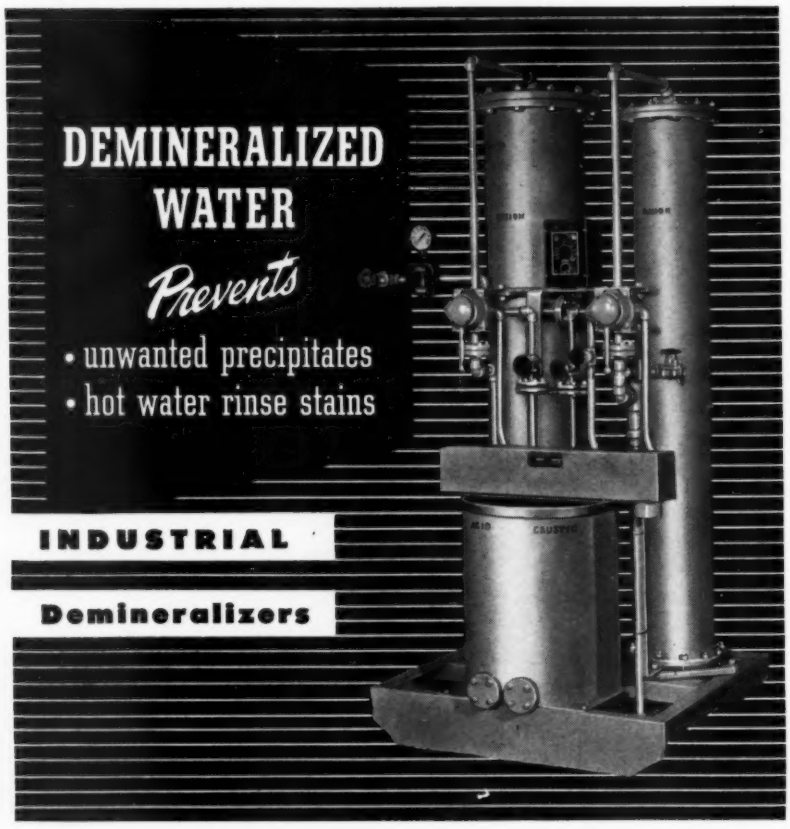

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With an INDUSTRIAL demineralizer chemically pure water, in any quantity, runs as low as a few cents per thousand gallons, depending upon the amount of dissolved solids in the raw supply water. And the equipment required is very simple — no heat, steam, or cooling water is used. Units can be made to deliver almost any quantity of purified water. The operation is practically automatic — only limited attention is needed periodically.

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PRESSURE FILTERS
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RUBBER LININGS
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HEAT EXCHANGERS

most informative book in months

Gentlemen:

I've just received a copy of your January, 1953 issue, and want to congratulate you on the excellent work that you and your staff have done with this publication.

Without reservation I can say that this is by far the most handsome and most informative book to reach my desk in many months, and I can see that you have gone all out for *finish* in 1953. We are proud to have our advertisement in this issue. . . .

Norman P. Gentieu
Technical Editorial Department
American Chemical Paint Co.
Ambler, Pennsylvania

those are kind words, Mr. Gentieu — especially coming from a good advertiser.

technical articles of great interest

Gentlemen:

In answer to your letter, I certainly am interested in continuing to receive *finish*. The technical articles are of great interest to me, and I find that I use the information in my work rather regularly. Having grown up in the washing machine industry, I am very interested in all of the news items concerning the various people in the plants.

W. W. Galbreath Jr.
Argonne National Laboratory
Lemont, Illinois

that's enough for us, Mr. Galbreath — you'll find a report on the home laundry industry in this issue.

authoritative articles invaluable

Gentlemen:

Recently I have had the need to refer to *finish* regarding current commercial practice, and found that your authoritative articles on plant installations, finishing of raw materi-

to Page 11 →

finish SUGGESTION BOX

New press combines function of press brake and stamping press into one machine

A NEW press, combining the principle functions of the press brake and the stamping press into one machine, has been designed for use in the fabrication departments of manufacturers of appliances and other metal products. The press-type brake will form mild and stainless steel as well as non-ferrous metals.

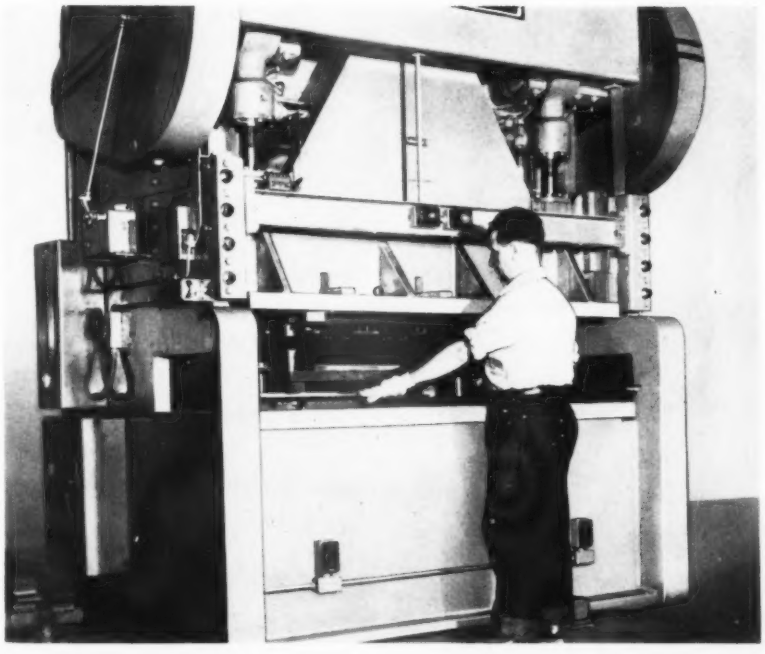
Blanking, piercing, shallow draw, bending, trimming, etc. can be done on the machine's 30-inch wide bed at a standard speed of 45 strokes per minute, or as high as 60 on fast light work. Closed side housing, oversize slide areas, end feeding, and direct-acting clutch-brake combination that needs no adjustment for wear, are other features of the new machine.

The new press-type brake has a standard stroke of 5", and a shut height of 14", with a ram adjustment of 5". It is fully rated at 150 tons each in five sizes: 4, 6, 8, 10 and 12-foot lengths. Wider bed areas and 225-ton capacity available.

Built-in operating controls offer a choice of continuous operation or automatic stop at top of stroke, and provide protection for other operators when the machine is used in progressive press work.

Typical examples of production work include blanking, notching, punching and shallow draw on inner liners for refrigerators, ranges, etc.

Source for further information on this combination machine may be obtained by writing to *finish*.



From the Editor's mail

→ *from Page 6*

als and finished products, and safe transit are invaluable. Being an engineer in the field covered by *finish*, I should appreciate it if you would include me on your list of free controlled subscribers.

D. M. Johnson,
Methods Engineer
Electronic Tube Engineering
Westinghouse Electric Corp.
Bloomfield, New Jersey

in your engineering capacity, you are certainly entitled to a subscription to *finish*, and one has been entered for you.

wants 50 copies of January issue

Gentlemen:

Would you please send at your earliest convenience 50 copies of the January issue of *finish*, carrying The Admiral Story. This will be covered by our Purchase Order 19508.

C. W. Pittman
Canadian Admiral Corp. Ltd.
Port Credit, Ontario

unfortunately, our stock of January *finish* was depleted immediately after publication.

extremely interesting magazine

Gentlemen:

Last evening I had the opportunity to look over your January 1953 issue which you had sent to a friend of mine who is a director of purchases in a local manufacturing concern.

May I compliment you on an extremely interesting magazine, and I am wondering if it would be possible to be placed on your mailing list so that this could be made available to our students in production processes, control and plant layout.

Col. O. S. Hulley
Associate Professor
Industrial Engineering
Purdue University
Lafayette, Indiana

we will be complimented to have *finish* used in production processes, control and plant layout courses at Purdue.

Chicago Vit RESEARCH BENEFITS THE ENTIRE INDUSTRY

Expanding the market for porcelain enamel has always been a long range objective of Chicago Vit. Result—product developments and coatings that have increased the use of porcelain enamel; new techniques that have simplified the production of porcelain enameled parts; improved methods that have contributed to greater operating efficiency and reduced costs in porcelain enameling plants everywhere.

These are but a few of the many ways the Chicago Vit program of continuous research benefits those companies engaged in porcelain enameling operations.

We hope that you will consider our research and development facilities an adjunct to your shop . . . an easy, sure way of solving enamel problems that may arise from time to time. Contact your Chicago Vit sales or service representative. He will give you on-the-spot advice and help, and will tell you the many ways the Chicago Vit laboratories can be of assistance to you.

for finest frit—Chicago Vit

ADS OUT_____

THE finish spotlight

The shape of things to come is seen in the "ice circle" taken from the full basket in Servel's revolutionary "Ice Maker" refrigerator, which freezes ice cubes without trays. "Ice circles" replace the old-type ice cubes.

AMERICAN CHEMICAL PAINT COMPANY

AMBLER CHEMICALS ACP PROCESSES PENNA.

Technical Service Data Sheet

Subject: HOW TO MAKE PAINT STICK TO GALVANIZED IRON WITH LITHOFORM®

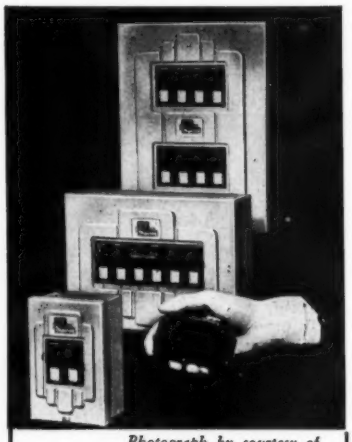
INTRODUCTION

"Lithoform" forms a dense, zinc phosphate coating on zinc, cadmium, and galvanized surfaces—including Galvanneal, cadmium plated steel, zinc plated steel, zinc base alloys, and zinc base die castings. The "Lithoform" coating, which is non-metallic and inactive, retards reaction between alkaline metal oxide and the paint film. Peeling and loss of adhesion are thus greatly retarded on painted Lithorized zinc and cadmium.

ADVANTAGES OF "LITHOFORM"

"Lithoform" forms a durable bond for paint. It is economical. It eliminates frequent repainting. It protects both the paint finish and the metal underneath. "Lithoform" meets these Government Finish Specifications:

QQ-P-416
RR-C-82
MIL-E-917A (Ships)
JAN-F-495
AN-F-20
U.S.N. Appendix 6



Photograph by courtesy of Murray Manufacturing Corp.

Murray Circuit Protectors are fully magnetic and provide maximum protection for both domestic and industrial wiring. Housings are of galvanized iron which is Spray Lithorized for long paint life.

THE LITHORIZING PROCESS

"Lithoform" can be applied by brushing or spraying the work with simple hand equipment, by dipping it in tanks, or by spraying it in industrial power washers.

Brush. Galvanized bay windows, cornices, rain gutters, hardware, building siding, truck panels, and farm equipment are typical of the many surfaces that are treated effectively with Brush "Lithoform".

Dip. This grade is used for coating cleaned surfaces of such typical products as cabinets, refrigeration condensers, etc., immersed in heated solutions in tanks.

Spray. The spray process is the most logical one with which to coat sheets, coiled strip or duplicate products best processed on a conveyor.

CHEMICALS ACP PROCESSES WRITE FOR FURTHER INFORMATION ON "LITHOFORM" AND ON YOUR OWN METAL PROTECTION PROBLEMS. CHEMICALS ACP PROCESSES

MEETINGS

METAL STAMPERS

Chicago Chapter of Pressed Metal Institute, Graemere Hotel, February 3.

Milwaukee Chapter of Pressed Metal Institute, Plankinton Hotel, February 4.

ENAMELERS CLUBS

Central District Enamelers Club, Mansfield-Leland Hotel, Mansfield, Ohio, February 6.

Eastern Enamelers Club, Sylvania Hotel, Philadelphia, February 7.

Midwest Enamelers Club, LaSalle Hotel, Chicago, March 14.

Pacific Coast Enamelers Club, Los Angeles, March 20.

ELECTRIC SIGN CONVENTION

National Electric Sign Association, annual convention, Dallas, Texas, February 9-11.

ASTM SPRING MEETING

American Society for Testing Materials, spring meeting, Detroit, March 2-6.

TOOL ENGINEERS

American Society of Tool Engineers, annual meeting, Statler Hotel, Detroit, March 18-20.

STAMPERS SPRING SYMPOSIUM

Pressed Metal Institute, spring technical symposium, Hotel Carter, Cleveland, Ohio, March 25-27.

FINISHES SYMPOSIUM

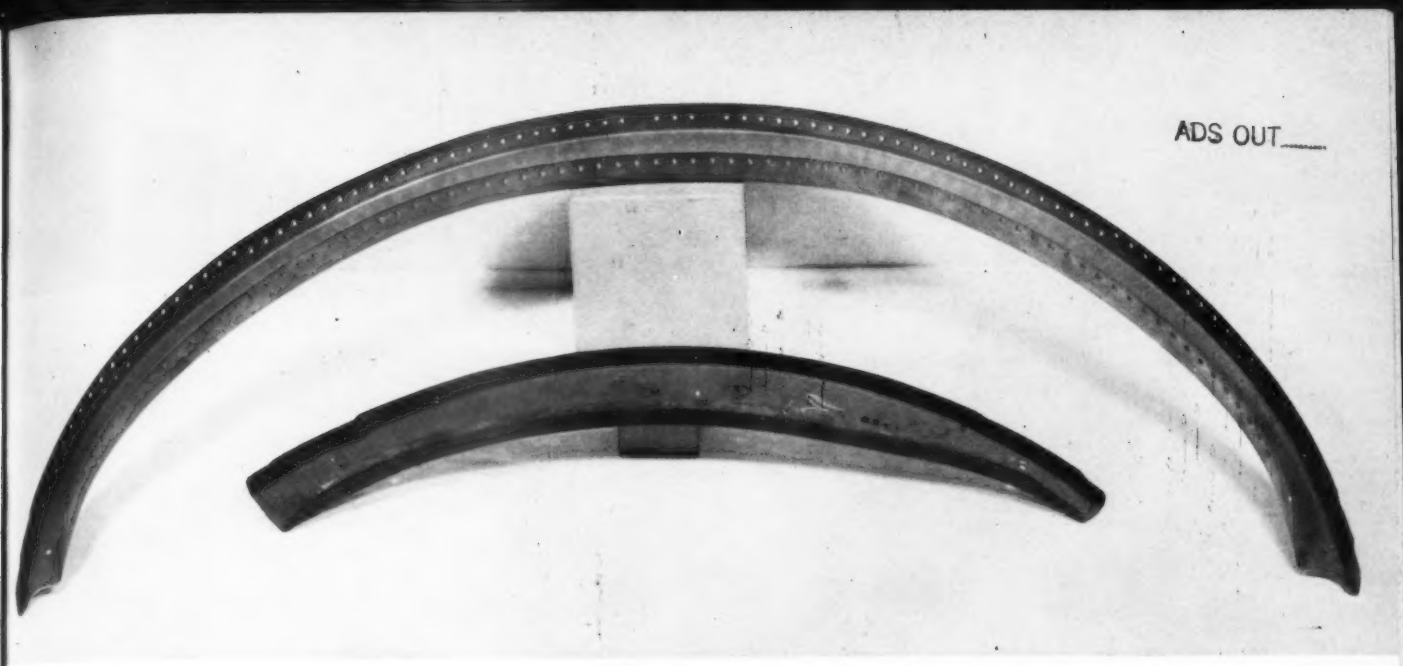
Case Institute of Technology, industrial finishes symposium, Cleveland, Ohio, March 30 through April 1.

AMERICAN CERAMIC SOCIETY

American Ceramic Society, 55th annual meeting, New York City, April 26-30.

LPGA CONVENTION

Liquefied Petroleum Gas Association, annual convention and trade show, Chicago, May 3-6.



New stainless steel widens design possibilities

including a report of research at Douglas Aircraft on 17-7PH stainless steel

by Gilbert C. Close • WESTERN EDITOR

A NEW industrial alloy and a worsted suit fabric have a lot in common. Each must be "fitted" to the specific demands and peculiarities of the individual user before it is acceptable. In the cast of a new alloy, it must not only add to the value of the product being manufactured, but it must be possible for the user to process and work the alloy with available equipment. This usually demands research over and above the research data supplied by the alloy producer. The original data supplied with any alloy is usually procured under laboratory condition. Results obtained with prevalent shop equipment in any plant may be substantially different.

When Armco Steel Corp. introduced the new 17-7PH precipitation-hardening stainless steel alloy, original research data indicated immediately that this material had specific advantages over other high strength stainless steels. Type 301 stainless steel, its nearest competitor insofar as strength is concerned, depends upon cold working in the full hard temper to attain its ultimate physicals. This, of course, limits formability within a range of comparatively low ductility. On the other hand, 17-7PH stainless steel can be formed and worked in the full soft or annealed condition, then be raised to its ultimate physical properties by a series of heat treatments. When cold working during forming results in semi-hardness of 17-7PH, it can be re-annealed for finish forming operations. It was apparent from the start that the ability of this new material to respond to heat treatment would make feasible the production of high-strength stainless steel parts hitherto not possible to produce with available steels.

Photo above shows aft main frame parts for a nacelle, of 0.040" material, which were hydropress formed, using a bend radii not possible to use with work hardening stainless steels.

This possibility created a stir in aircraft production circles where high strength, light weight and corrosion-resistant parts are at a premium. Yet there was still the problem of handling this new alloy with available shop processing and working equipment. To iron out this difficulty, the El Segundo Division of Douglas Aircraft Company inaugurated a research program to determine how to handle the new alloy with available shop equipment to obtain best results. This work was carried out by B. P. Planner, metallurgist in the Process Engineering Department, and under the direction of O. A. Perry, process engineer.

General description

17-7PH is a precipitation-harden-

This drop hammer-formed portion of a nacelle frame was first annealed, hit once, then received the initial 90-minute heat treatment at 1400° F. It was then hit again, followed by the final 30-minute heat treatment at 950° F. With conventional 18-8 type stainless steel, the intermediate annealing action of the first heat treatment would not have been possible.

ing stainless steel developed primarily for sheet, strip, plate and wire applications. It is available also in angles, bars and forging billets. It is supplied by the vendor in the full soft or annealed condition, with an ultimate tensile strength ranging from 115-150,000 psi, and a tensile yield strength of from 35-55,000 psi. In the fully annealed condition, the new alloy has an elongation ranging from 20 to 40 per cent in a two-inch test section. This great ductility permits deep-drawing and excessive forming as long as the full soft condition can be maintained. When cold working during forming results in lowered ductility, full ductility can be restored by an intermediate heat treatment.

Under normal shop conditions and uses, the hardening of 17-7PH is accomplished by a two-step low temperature precipitation heat treatment. The first step consists of heating for 90 minutes at 1400° F., with subsequent air or furnace cooling to room temperature. In the second step, the material is heated for 30 minutes at 950° F., then air or furnace cooled. This two-step heat treatment raises the ultimate tensile strength to 185-210,000 psi, the tensile yield strength to 150-190,000 psi, and reduces elongation to between 7 and 12 per cent. The interval between the heat treating operations is not important, and prefabricated parts can be stored indefinitely after the 1400° F. heat treatment since no aging of the material takes place at room temperature.

Forming operations

A large proportion of the Douglas research work centered around forming operations. These included drop hammer, hydropress, power brake and stretch forming work. All forming was accomplished in the fully annealed or "as received" condition, except when the operation was so severe that an intermediate anneal was required.

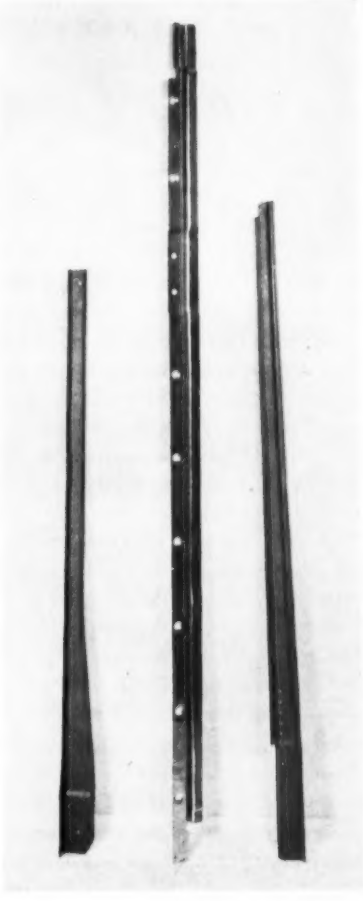
At Douglas, the intermediate anneal is accomplished by heating for 5 minutes at 1950° F., then air or furnace cooling to room temperature. This treatment will restore full ductility, but introduces the necessity of a third final heat treating operation. After the final forming operation which has required an intermediate anneal at 1950° F., the parts must be re-heated for 5 minutes at 1750° F., then air or furnace cooled. They are then ready for the final two-step heat treatment. When parts can be finish-formed without an intermediate anneal, the final two-step heat treatment is all that is required.

In observance of this technique, the following sequence of operations in all forming work is now in effect in the Douglas shops:

1. One or more forming operations in the fully annealed or "as received" condition.
2. Intermediate anneal if necessary . . . . 5 minutes at 1950° F. with air or furnace cooling.
3. Finish forming.

to Page 82 →

Formability of 17-7PH stainless steel in the annealed condition is well illustrated by these fore and aft stringers for the nacelle structure in an attack bomber fuselage. Parts were formed on a hydropress, are of 0.036" gage, and incorporate a 1/8-inch bend radius. Initial heat treatment at 1400° F. for 90 minutes followed forming. The parts were then dimpled, received the final 30 minute heat treatment, then were cleaned.



ADS OUT

SERVEL, INC., Says:

"We average 40 to 45% less mill time using COORS Alumina Ceramic Grinding Balls. With COORS grinding balls, we get a batch with approximately 5,000 mill revolutions, as compared to an average of 11,000 revolutions with previously used balls.

"Since using COORS grinding balls, we do not have to wash the mills. It took about one-half hour washing time per batch when we used a different grinding ball.

"Servel started using COORS high-density grinding balls in July, 1950. And after more than a year, we have not added any more balls to the mills. With previously used grinding balls, it took seven balls per batch to a 1,000 pound mill.

"We now use COORS Alumina Ceramic Grinding Balls in a 2,300 pound mill, a 2,200 pound mill and a 1,000 pound mill."

Write your COORS representative, today! See how you can cut milling time as Servel, Inc. has done.

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West Coast Sales Representative . . .
Melvin L. Jontz Company, 5028 Alhambra Ave., Los Angeles 32, California

This large cone, shown in two parts, is an example of the large equipment that can be coated successfully. This particular piece is for use where high temperature, corrosion and thermal shock are factors.

High temperature ceramic coatings for chemical use

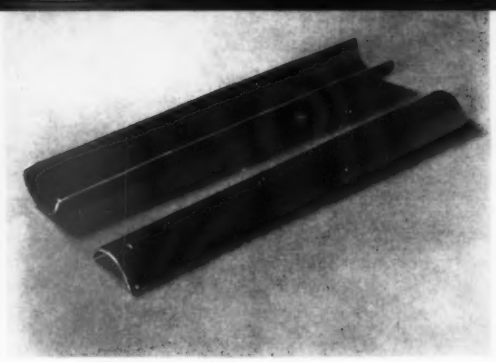
by W. A. Barrows • PRESIDENT, BARROWS PORCELAIN ENAMEL CO., CINCINNATI, OHIO

DURING the twenties and early thirties, the application of porcelain enamel to household appliances commanded a great part of the research and development efforts of the porcelain enameling industry. However, recent research, prompted in great part by the jet-engine program, has resulted in new techniques and, so to speak, a completely new group of porcelain enamel coatings. These coatings deserve new attention as there are strong indications that they will be valuable aids to the solution of corrosion and heat problems.

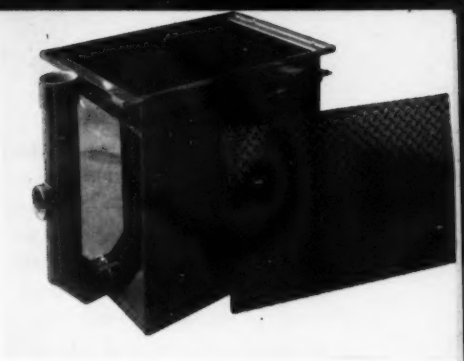
Clarification and delineation of the characteristics of these new coatings are important to engineers anxious to suggest equipment that will have such vital features as low cost, long life, and ease of maintenance.

It is important to note that there are hundreds of different ceramic coatings. The selection of the proper coating depends upon its end use. Prolonged operation under high temperature and the application of high stresses will require the selection of the proper base metal as well as the proper coating. Acid resistance, di-

Inner surfaces on these pump housings were coated with porcelain enamel to reduce friction and increase efficiency.



Porcelain enamel coated pipe, sectioned to show coating on inside and outside, is used in aluminum de-gassing operation.



Grease trap, completely coated with porcelain enamel, is designed for use in drains buried in the ground.

electric characteristics, and resistance to thermal shock also are important factors for consideration, their importance varying with use conditions. However, despite the impossibility of declaring that these finishes will have certain characteristics under any and all operating conditions, it is possible to discuss the generally accepted features of ceramic coatings which will serve as a guide.

Characteristics of ceramic coatings

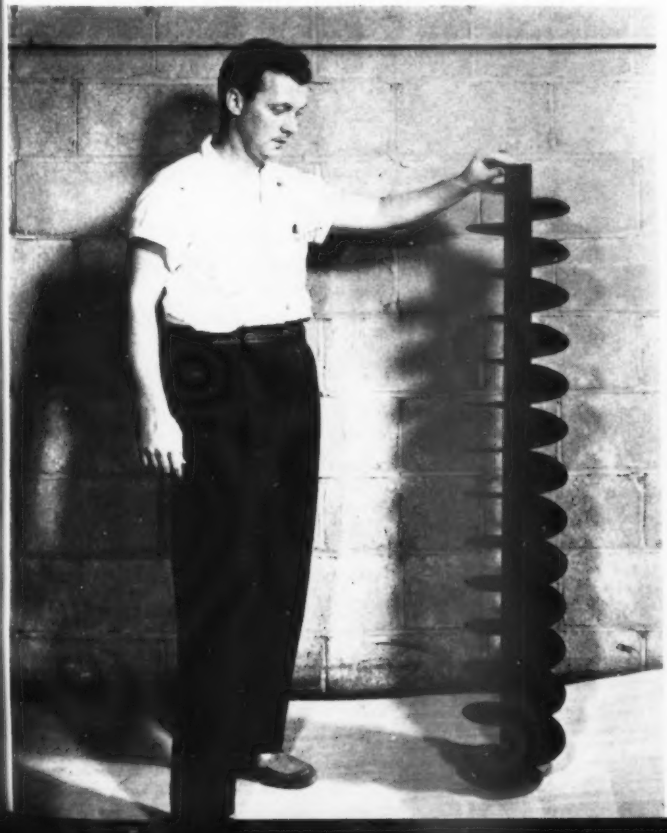
The raw materials for ceramic coatings are widely available. Therefore, cost and supply problems, which confront design engineers more and more during these days of scarce and expensive metals and alloys, are considerably lessened when these coatings are used. Almost any ceramic coating can be supplied readily at a relatively low cost. Certain frits costing as high as two dollars a pound, are the exception. Most frits cost about ten cents a pound. However, even the expensive mixtures have more than justified their use, because coatings of these frits are applied in thin films and have increased tremendously the life of parts on which they have been used. At the same time, they have reduced maintenance costs. The coatings prepared from the lower cost frits have proven to be good materials because of their good competitive price position and other desirable characteristics when compared with results obtained.

Basically, the new high-temperature ceramic coatings are, as the name implies, coatings designed to withstand substantially higher temperatures than ordinary porcelain enamels. Whereas ordinary porcelain enamels are limited to sustained use at temperatures of less than 1000° F., the high-temperature ceramic coatings generally can be used at temperatures of 1600° to 1800° F. for long periods of time, corrosion and mechanical factors being normal.

Weathering does not cause corrosion of metal parts coated with these ceramic coatings. Inasmuch as the coatings completely cover the metal parts, and as they have high corrosion-resistance qualities, the possibility of destruction of parts under atmospheric conditions is remote.

Acids and alkalis present a particular corrosion problem which requires additional consideration. It

Uniform porcelain enamel coatings on gypsum conveyor screw blades, of different thicknesses at center and outside sections, were accomplished without difficulty.



Mold pans used for curing industrial materials through baking. Here three problems were overcome by enamel coatings: high temp., corrosion and oxidation of material being cured.

quires additional consideration. It can be stated generally that there are two groups of ceramic coatings: (1) regular, which are suitable for use only under normal atmospheric conditions and can thus be used with solutions that are normally free from acids and alkalis, and (2) acid resistant, which are resistant to most acids except hydrofluoric acid.

As an example of ceramic resistance characteristics, one type of a special ceramic coating will withstand reducing and oxidizing atmospheres and is reasonably resistant to chlorine, sulphur dioxide or trioxide, carbon dioxide, and vanadium gasses. Acid and alkali test samples showed 0.0005 grams per sq. in. loss in 6% citric solution at boiling temperature for 2½ hours. Loss of 0.0007 grams per sq. in. 5% pyro solution at boiling temperature for 2½ hours was experienced.

In connection with alkali resistance, it can be stated generally that ceramic coatings are resistant to mild alkalis and detergent solutions.

Metal selection is important

It is important that design engineers be familiar with certain other factors, particularly those concerned with the characteristics of the metal to which the ceramic coating is to be applied. For example, it should be noted that porcelain enamel can be most easily applied to enameling iron and cast iron. Cold-rolled steel provides the next best base. The new high-temperature ceramic coatings, on the other hand, are designed for use on stainless steels and can be applied to any of the commonly appliable stainless steels, including straight chrome stainless. However, one of the new high-temperature coatings is designed for use on the 1010 steels, and will greatly improve the heat resistance of cold-rolled steel. Generally, non-ferrous metals do not form a good base for the application of porcelain enamel or ceramic coatings.

Ceramic coatings can be applied according to strict tolerances. If necessary, tolerances of a few thousandths of an inch can be held. High-temperature coatings are generally applied at a thickness of .001″ to .0015″.

The mechanical impact which various ceramic coatings can withstand is extremely high, and it can be stated as a rule of thumb that the coatings will adhere to a metal up to the yield point of the metal.

The coefficient of expansion of brazing materials and the low melting point of solder makes them impractical for coating with ceramic coatings. At the same time, it should be noted that pieces of uneven thickness result in non-uniform heat penetration during fusing of the glass.

In summary, four factors should be considered for successful ceramic coatings: base metal, type of coating, design, and fabrication.

Intensified research in recent years has shown conclusively that porcelain enamel and ceramic coated metals will be an increasingly important factor of future chemical design. Investigation of strength, heat and wear resistance, acid resistance, and electrical properties of ceramics has resulted in the development of various finishes that can profitably be adjusted to use in industry.

Porcelain enamel and ceramic coatings are being used today as coatings of chemical processing vats, acid storage tanks, brine tanks, chemical piping, and smoke stacks.

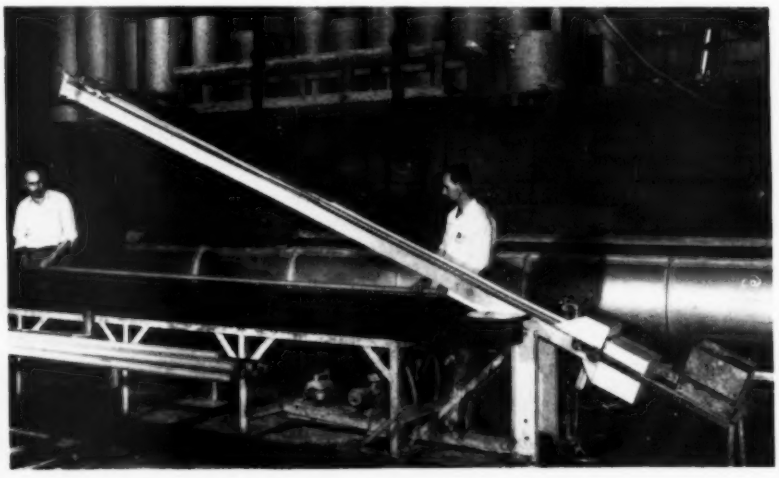
Present day use of these coatings is only a small part of potential applications. The unusually high heat resistance of the new group of coatings combined with their high corrosion resistance opens numberless potential uses for these important coatings.

SPECIAL DIPPING, DRYING UNITS USED IN ENAMELING BLACK STEEL PIPE

TO COMPLETE the sequence of operations for applying porcelain enamel to long lengths of black steel pipe, Barrows Porcelain Enamel Co., Cincinnati, designed a special dipping machine and drying unit.

The dipping unit consists of two long troughs to hold enamel slip, one trough containing ground coat, the other cover coat. Between the troughs is a third shallow trough with fittings at each end to hold pipe up to 21 feet long. This center trough is pivoted at one end and can be swung up to a 45° tilting position *(see photo)*. At the same time pipe in trough can be made to revolve. The pipe is then immersed in the slip, and a pump forces the slip through the pipe to prevent entrapped air pockets. The pipe is then put into a draining trough.

The drying unit *(background in photo)* consists of a series of 15 chambers mounted in rotary fashion, with each chamber holding one length of pipe. Steam heated air is then introduced to the chamber to flow around the inside of the pipe. The pipe is then ready for firing in a special furnace *(see September 1952 finish, Page 19)*.



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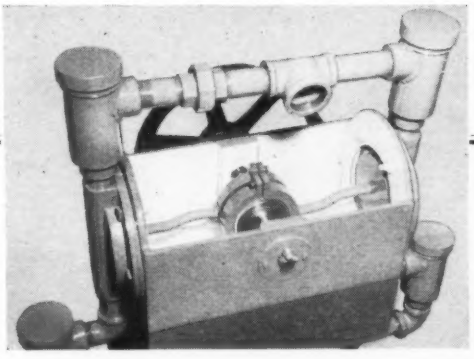
Dean Nicol, enamel superintendent of Crown Stove Works, advises that his company's Vitra-Pump has far exceeded expectations and has out-performed any pump the firm has previously used on dip tanks. Here is a pump that fills a long felt need in the porcelain enamel industry . . . a pump that resists the abrasion of the toughest of viscous liquids. You can eliminate all the inconvenience, all the annoyance, all the costly lost production time that results from pump failure when you install a Vitra-Pump on your dip tank or in your millroom. Prompt delivery! Write for literature and prices.



- NO GEARS OR IMPELLERS TO WEAR OUT
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- VARIABLE CAPACITIES
- BALL BEARING CONSTRUCTION
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seventh in a seri… uding
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THE finish LINE

HOW WHITE IS WHITE— is a rough way of stating a question that has been causing concern among the producers of all types of metal finishes, the manufacturers of all kinds of finished metal products and the consumer-users of the finished products for a good many years.

To state the problem simply and from the practical standpoint we raise the question—"Can white finishes for metal products formally used in groups (kitchen appliances for example) be standardized for color characteristics so the consumer-user says *yes*?" We believe that the answer can and should be "yes." At the same time we hasten to comment that the problem is not as simple as it appears in print and that the solution will be one that calls for the combined use of available technical skills and a spirit of cooperation between *all* of the segments of industry that are involved.

A technical and practical problem

If we were to start a discussion of the technical problems involved we would be using such terms as: spectrophotometer, reflectometer, diffuse and specular reflectance, Munsell notations, hue, value, chroma and other technical designations that are important to the technician and researcher but need not be included in a strictly "practical" evaluation of the problem.

We have received inquiries at finish from companies, large and small, concerning an existing source for a standard white that individual finished product manufacturers could voluntarily use for their own brands and for the convenience of the final customer.

These inquiries raise two questions: (1) should white for metal products — particularly appliances for kitchen and laundry — be standardized, and (2) is there a technical and practical solution to the question of standardizing white finishes?

In our opinion, it should be possible to come up with an affirmative answer for both of the questions. However we are not primarily interested in our opinions. We are interested in determining the degree of interest in the problem, the possibility for getting action, and the chance for cooperation among metal products manufacturers, particularly those making major appliances.

Work has been done

We would be remiss in opening the question editorially if we failed to report the fact that considerable work has been done by important technical men in the appliance and finishes field over a period of years.

Some progress has been made by individual manufacturers in attempts to standardize white for appliances of their own make which are to be used together.

Some cooperative work has been carried out during recent years by technical representatives of major appliance producers and from the suppliers of both organic and ceramic finishes.

The National Electrical Manufacturers Association has a "Joint Sections Committee on Color of Kitchen Appliances" which has held productive meetings and appears to be nearing an approach to the problem.

Another opportunity for cooperation

It will be evident even if it is determined that white standardization is needed and wanted—and that it can be technically and practically accomplished—that even then there will be the question of cooperation by the majority of important manufacturers before the assured ultimate benefits will accrue to producers and consumers.

We will make the same offer that was made in connection with the now eminently successful National Safe Transit Program when the cooperative plan was first suggested by finish. We will help by offering an editorial sounding board for ideas and opinions and for promoting a standardization if and when it is proved to be desirable and practical.

Any finish reader interested in this problem is encouraged to express an opinion. Just state whether it represents a personal or a company opinion when you write.

Dana Chase
EDITOR AND PUBLISHER

13

finish, 1952

Editor's Note:

It is our hope that all who have been following the "How White Is White" campaign in *finish* have a full realization of the fact that the problem of white standardization is not in any sense a simple one.

The purpose of our campaign is threefold: (1) to establish the need for a standardized white, (2) to investigate the feasibility of a technical and practical solution to the problem of standardizing white finishes, and (3) to encourage action by established organizations interested in the subject.

We are pleased to publish here an authentic summary of the work done by the NEMA Joint Sections Committee on Color of Kitchen Appliances, referred to in earlier issues. This summary and comment, dated December 8, 1952, was received from D. H. Simpson, of Hotpoint Co., and committee chairman. Notice that there is reference to a possible national standard through the agency of American Standards Association.

We believe our readers will be interested in the tone of agreement between the NEMA progress report and a memorandum to *finish* from the American Standards Association, also published here. It will be of interest to note that this memorandum bears a date of September 15, 1952. Each report came to *finish* entirely independent of the other.

Of course there will be important organizations other than NEMA involved in the appliance picture, and they will also have their say on any standard—and—from our correspondence on the subject it seems evident that other organizations and their member companies are grateful to NEMA for taking the lead in this important work.

Committee on Color of Kitchen Appliances
Major Appliance Division
National Electrical Mfrs. Association

To *Finish*:

In some issues of the "How White Is White" section of your magazine, reference has been made to the National Electrical Manufacturers Association and to its committee originally known as a "Joint Sections Committee on Color of Kitchen Appliances". I believe that you and your readers will be interested in knowing something of the work which has been done by this committee toward realization of the program.

Several years ago, the National Electrical Manufacturers Association realized the desirability of having uniformity in the color of white finishes used on the various kitchen appliances. A committee was appointed to consider this problem and, if found feasible, to recommend a white color which could be adopted for general use. As the result of a recent change, this committee is now designated as Committee on Color of Kitchen Appliances, Major Appliance Division.

Survey emphasizes wide variation

An early survey by the committee served to emphasize the wide variation in shades of the white finishes on appliances generally available on the market. That the condition still exists is evident from the fact that one large producer of synthetic enamel finishes has recently displayed sample panels showing some 24 shades of white which that company alone is currently selling to appliance manufacturers.

The first committee action was to determine the method by which any color chosen should be defined and measured. Decision was made that the Munsell system of color designation would be used for this purpose. In recognition of the difficulties involved in reproducing exactly a Munsell designation specified as the primary standard, two sets of tolerances were subsequently established. One set of tolerances defined the permissible variation when preparing secondary standards — i. e., color swatches, sample panels, etc. Another set of broader tolerances referred to the color of finished products.

From its inception the committee has considered that the color finally chosen not only must be one which has pleasing appearance but also must be one which can be both attained and maintained with finishing materials currently available on the market and in general use in the industry.

The complexity of the problem was increased by the necessity for including porcelain enamel on steel finishes as well as the many types of organic finishes. As a matter of fact, when the titanium base porcelain enamels were coming on the market it was considered important to delay the committee activities for a year or more in order to establish the extent to which the use of these frits, with their highly desirable properties, would necessitate revision of the color which had already been decided upon.

No big "change" contemplated

Our committee has tentatively adopted a color, identified by a specific Munsell notation, which is actually not much

e is white?

uding an authentic summary of work ASA memorandum on the subject

different from the colors currently used by a number of appliance manufacturers. It has been established that manufacturers of synthetic enamels and other types of organic finishes can easily produce this color and at the same time maintain the other characteristic properties of their products. At present, committee members are in contact with their sources of porcelain enamel frit to ascertain that the color will be satisfactorily produced in this medium.

When committee members agree that the color is a practical one, a recommendation will be presented to the proper NEMA agency for consideration and ultimate adoption as a formal standard of the Association. This chosen color can then be used by as many companies as may elect to do so. We realize the importance of having color swatches available for visual comparison, in addition to use of the Munsell designation. It is planned that copies of the NEMA Standard specification with an accompanying color swatch will be available to the public at such time as the committee recommendation is adopted by the Association. In addition, color swatches alone may be made available from some other source which will have to be announced later.

At the present time color panels are not available for public distribution.

For the future — an American standard

It appears that the action of NEMA constitutes the first definite step in industry in a program of attaining uniformity of the white color used on appliances. In order to promote wider usage, we believe that the NEMA standard could well be promulgated as an American standard through the agency of the American Standards Association. This action would follow the precedent of American Standard Z55.1-1950 covering Gray Finishes for Industrial Apparatus and Equipment.

Those persons who are familiar with the properties and the application processes of the various finishes are fully aware of the potential and probable variations in color on final products. They are justifiably skeptical that the ideal result of perfect color uniformity can be accomplished.

In our opinion the general adoption of a *specific white color for all kitchen and home laundry equipment should be* looked upon as an *aid* toward uniformity of color. The lay public should understand that general adoption of the NEMA Standard, or of an American Standard, can be effective in achieving considerably better uniformity of the white color of finished products, but cannot be expected to result in complete identity of color of all appliances, even of those carrying one manufacturer's trademark.

D. H. Simpson
Committee Chairman

American Standards Association

a memorandum

To *Finish*:

The editors of *finish* have done an excellent job in showing the need for standard white finishes. The American Standards Association is naturally interested in the editorials, and the published replies. A standard for the finish of home appliances is not impossible; it is, in fact, quite feasible.

Since the 1920's, the facilities of ASA have been used to standardize colors in the fields of traffic signals, industrial accident prevention signs, identification systems, and the definition of colors for painting machinery to obtain harmonious assemblies.

Equipment color standardized

The problem confronting the housewife today on nonuniformity of white finishes is similar to that which, prior to 1950, confronted factories, machine shops, engine rooms, etc. They could not get the gray finish of replaced parts to match the gray finish of the rest of the equipment. Various manufacturers and producers had to distribute color specimens to the consumers so that a suitable match could be made. The cost of preparing, printing and distributing these charts was borne by the producer. When a consumer ordered equipment from different manufacturers he had to compare color charts of those companies in question and had to depend on his color perception to make a good match. If a particular machine shop had equipment from twenty different manufacturing companies, as many color charts had to be kept on file; as many time-consuming matches had to be made; and, as many shades of the same color could be chosen depending upon the fallability of the purchaser's color sense. This system was both inefficient and uneconomical.

When the problem was put into the hands of ASA committees, experts from 19 technical societies and organizations found that four shades of gray were all that were needed to meet the demands of most consumers. The American Standard Gray Finishes for Industrial Apparatus and Equipment was approved on March 8, 1950. This standard contained specifications for the four shades of gray including the classification of the degree of gloss. The Standard had not even been printed when requests for copies were received. Since then, the publication has found very wide acceptance in industry. Today, purchasers merely specify the finish as "American Standard No. 61 Gray", for example, and because of the close tolerances in making the standard shade, they are assured of an excellent match regardless of the supplier.

All interests represented

Under ASA procedure, projects cannot be initiated by the Association itself; they must be submitted by a competent organization or individual. A canvass is then made to ascertain the necessity of the proposed standard. If the national need is established, the work is then initiated and placed in the hands of a committee properly balanced with representation from all parties at interest.

From the published replies to editorials in *finish*, the need for a standard on white finishes for home appliances is evident.

ASA Sectional Committee, Z55, which developed the Standard on grays, saw the future need for specifications of other colors. From the article "Mixing or Matching 'Standard' Grays", in the September 1950 issue of *Standardization*, the following paragraph is taken:

"With approval of the standard grays, it is possible that the committee will consider the practicability of standardization of other colors. The committee will welcome information on the need for such standards. Comments and suggestions should be sent to the American Standards Association, 70 East 45th Street, New York 17, New York."

George Paine
Director of Public Relations

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Top men in the industry on Finance, Management, Research and Development, Production, Sales and Service combine their talents to serve you at Century.

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You can get the best in frits — that have been plant tested — and save money too if you "buy from Century." Management likes these frits for their money-saving features, and plant men like them for their trouble-free workability.

If you aren't using Century frit now, you should arrange for a plant trial soon.

The seven Century Vit men shown here represent a total of 211 years of technical and practical plant operating experience in the porcelain enameling industry.

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To keep home appliances new-looking longer, porcelain enamel finish is the answer. And among porcelain enamels, thin coat titania enamels—with no sacrifice of opacity—possess those properties which are most suitable for appliance use: greater shock, abrasion and chemical resistance.

TITANOX-TG, non-pigmentary titanium dioxide, is specially processed for all ceramic formulations. Through its controlled chemical and physical composition, TITANOX-TG assures unvarying color uniformity, speeds production and lowers cost. TITANOX-TG-400 is especially useful where characteristic delicate blue-white tints are desired.

Titanox Technical Service is always available to assist you with frit formulation problems. Ask your Titanox representative or write Titanium Pigment Corporation, 111 Broadway, New York 6, N. Y.; Boston 6; Chicago 3; Cleveland 15; Los Angeles 22; Philadelphia 3; Pittsburgh 12; Portland 9, Ore.; San Francisco 7. In Canada: Canadian Titanium Pigments Limited, Montreal 2; Toronto 1.

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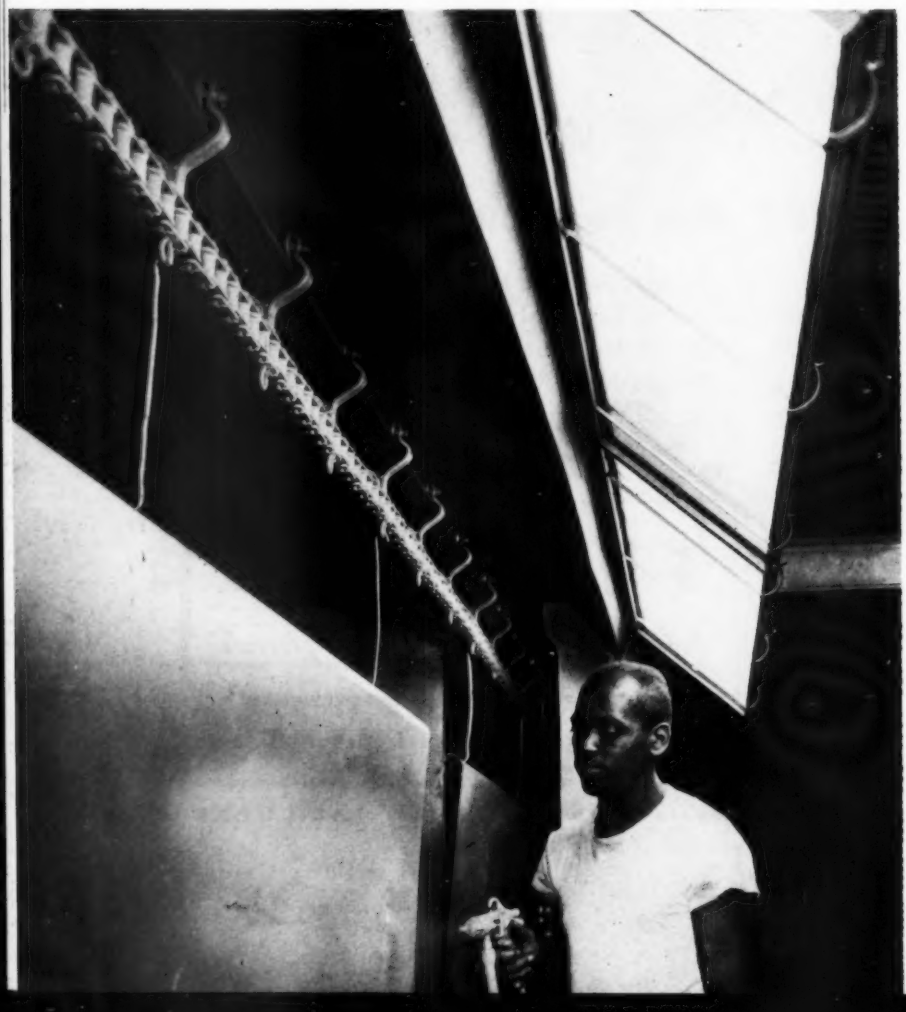
Right: Oil-smeared furnace panels on elevator for lowering into degreaser. Vapor temperature of 320° F. is maintained through the use of three 6-kw immersion heaters.

ILLUSTRATIONS COURTESY THE ELECTRICAL LEAGUE OF CLEVELAND

Below: Lots of light on his work permits spray booth operator to work better with less effort. Overhead 3-lamp fluorescent fixtures are explosion proof, easily cleaned.

Finishing parts for central heating units in a 15-minute cycle

by Sutton Kinter • FINISHING DEPARTMENT FOREMAN, DORNBACK FURNACE & FOUNDRY CO., CLEVELAND, OHIO



OUR company, which produces gas and oil furnaces for residential and commercial use, has a new mechanized finishing line which provides easier work and better production.

We use a variable-speed electric conveyor, an electrically-heated degreaser, and a new 22-foot infra-red oven. This set-up has tripled production, and improved our product.

We formerly used a hand wipe to degrease, and baked our finish in a home-made infra-red oven which was much less efficient. Now we have an oven that's really performing, one which we can control with precision. We are able to put a better finish on our furnace panels, and do it easier and faster.

The Dornback finishing department conveyor moves overhead on an oval course — a round trip of 210 feet.

Degreasing operation

Oil-smeared furnace parts and panels begin the finishing process stacked in an elevator-like rack. An operator lowers the electrically-controlled rack into

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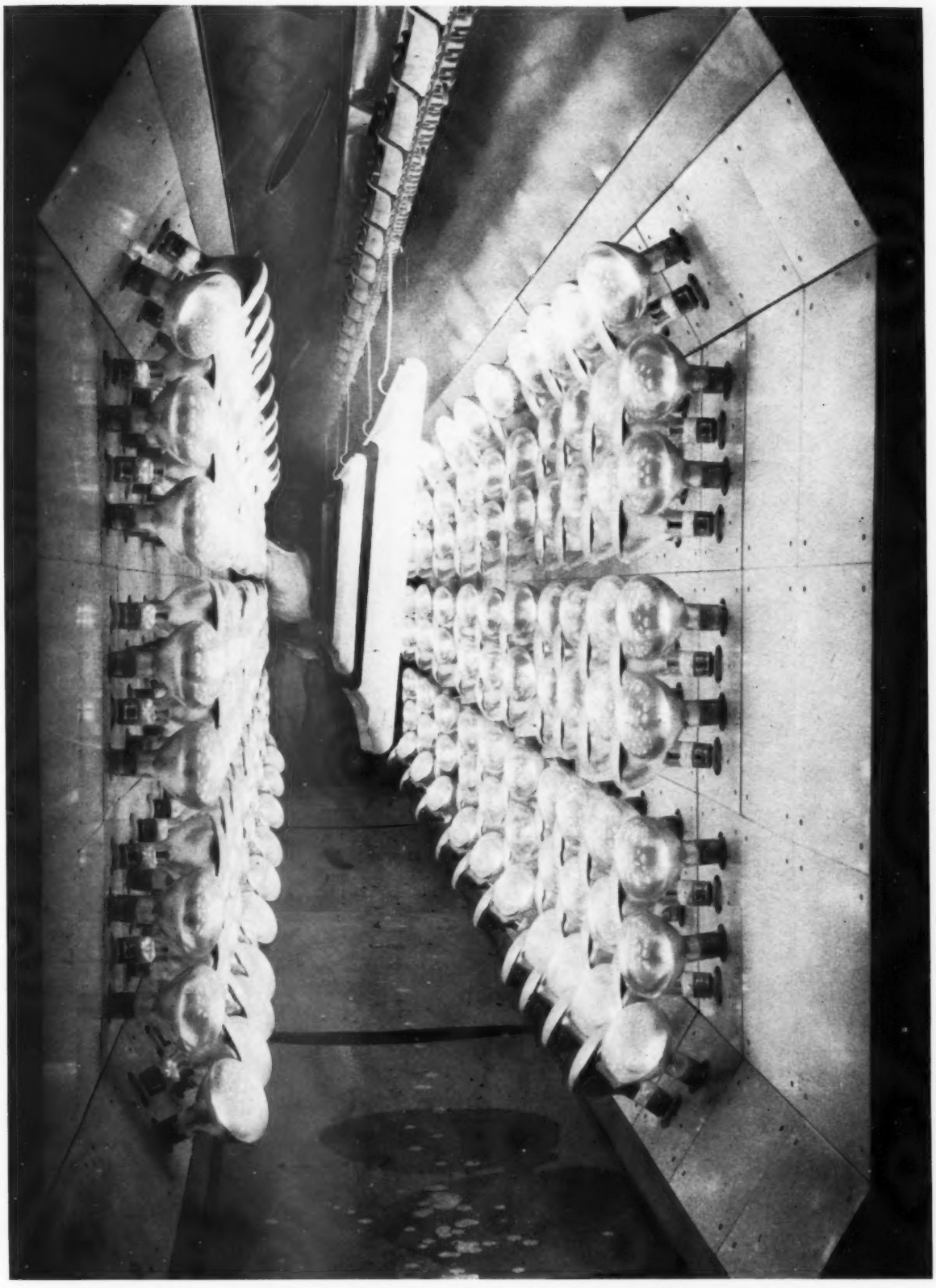

The finish is baked on panels for central heating units by this versatile 80-kilowatt infra-red oven. Angled lamps bounce the heat rays in criss-cross patterns to distribute uniform temperature over the entire work surface. The panels bake out in five minutes.

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being unloaded into a drier. This unretouched photo shows the uniform particle size even as it comes from the smelter.

All Hommel Frits are chemically balanced and properly smelted so that water quenching and subsequent milling does not affect their stability.

Water shattered frit when ball milled, grind more uniform and faster, hold their set more uniformly for dipping and spraying, have less tendency to tear and give a smooth finish when fired.

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The outlook for the future in the home appliance field

Part II — the use of advertising and promotion to help "manufacture customers"

by Donald M. Hobart • VICE PRESIDENT AND DIRECTOR OF RESEARCH, THE CURTIS PUBLISHING COMPANY

IN the first part of this article on the future economic climate in the home appliance industry, we asked that appliance manufacturers ponder two questions regarding their plans to "manufacture customers." The questions pertained to a study of their products and their markets—two essential phases of marketing. A third phase supplies the sales drive, and will be discussed herewith.

The third question then pertains to the sales plan and the use of advertising and promotion to help "manufacture customers."

Advertising and selling — necessities for 1953

Unless you are taking full advantage of the possibilities of advertising and promotion, you are not exerting your full sales strength. It does not matter what the economic climate is, advertising and promotion are essential in them all. They are basic in the American economy; basic in the successful and profitable operation of your company. They are as necessary in a sellers' market as in a buyers' market. From what indications we have, advertising, selling and promotion are going to be more necessary than ever in 1953. They are necessary every year.

Advertising and selling are the forces which have created and which maintain the large volume consumption that is a prime necessity of our dynamic and expanding economy. Advertising, one of the most powerful of all the means of mass communication, informs people of what you have made and have for sale. It arouses their desires to buy and own. It brings together the products that have been made and the customers who wish and need them.

Advertising and selling are responsible for bringing the consumer to market. They provide the incentives, awaken the needs, provoke and strengthen desires. They bring the public news of manufactured products like those in the appliance industry. They spread information about ranges, space heaters and other appliances.

Two main objectives of advertising

Advertising, continued and frequent advertising, has two main objectives. The first is the immediate sale. The object of advertising is always to sell goods, products, and services. The second objective of sustained national advertising — and it is of at least equal importance — is to establish a brand name, to manufacture customers, to obtain and hold a franchise in the consumer's mind. . .

When people buy, they buy the brand name they know, the product backed by the guarantee implicit in national advertising. They buy the product of the maker who they know is proud enough of his brand or brands to advertise it far and wide and establish it in the public mind. Brand preference is built that way.

It works. Believe me, it works. Let me give you a simple illustration. Let's consider a common product — the tomato. In the manufacturing process, when the tomato is squeezed and put into a can and labeled "soup", one brand is preferred by about 70% of all the housewives. That is brand preference at work. . .

In 1914, when The Curtis Publishing Company made its first survey of the automotive industry, there were 130 companies manufacturing automobiles in this country. Our report stated then that comparatively few of these companies would remain long in business. They would be those who made a good automobile in the various price classes and advertised it successfully.

We have prepared a chart which we call "After the Battle." On this chart we have placed the name of every automobile which has ever been manufactured in the United States and have drawn a red line through each name which has disappeared from the picture. The names of over 2,500 automobiles appear on this chart and only 20 makes are still being sold. All of them are continuous and consistent advertisers in national magazines. They are the 20 who have made good automobiles and have manufactured customers for them.

The third question, then, is this. What about advertising in the appliance industry? Is it geared to the sales accomplishment manufacturers wish to achieve in 1953 and 1954? Will it do the long-range job later — whatever the economic climate? Has it the continuity and frequency which will build brand preference for products in consumers' minds, and results not only in immediate sales but in so establishing brand

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The outlook in the gas appliance field

including a brief report on trends and references to fast growing products

by Edward R. Martin • DIRECTOR OF MARKETING AND STATISTICS, GAS APPLIANCE MANUFACTURERS ASSOCIATION, NEW YORK CITY

One of the driving forces in American retailing — and all other phases of American business — is the everlasting compulsion to top the sales figure for the same day, same week or same month of last year.

Last January — as far as gas appliance business was concerned — it wasn't only tough to beat the previous year's totals — it was impossible. But this is another year, a happier time for forecasting and apparently a better year for making sales.

The gas appliance industry entered 1952 in a sales slump which carried over from the closing months of 1951. Forecasts at the beginning of last year indicated that 1952 sales wouldn't come close to the 1951 volume. The first quarter seemed to justify the bearish predictions — but a pick-up during the normally slack months of June, July and August went a long way toward closing the gap between the two year's figures in many gas appliance classifications. And the continued strength of consumer demand through the closing months brought most divisions of the industry close to or above the 1951 levels.

Gas ranges, for example, off 36 per cent during the first quarter of last year, were off only 22 per cent at the end of the first six months, and the minus percentage was cut to 9 per cent by the end of October — with demand still strong and prospects brighter for sufficient steel to permit production that would keep pace with the public's willingness to buy.

This upward trend shows every prospect of continuing at least through the first half of 1953 — and there are several contributing factors. Gas range manufacturers have united in an industrywide program designed to acquaint homemakers with the time-and-labor-saving features of the modern; completely automatic gas ranges.

Expanding natural gas and LP-gas means new appliance sales

The continuing expansion of the natural gas pipeline system will of course tend to increase demand for ranges in communities which this year will receive the fuel for the first time. And the rapidly growing popularity of LP-Gas (butane and propane) in rural areas will continue to increase the use of ranges in areas beyond the pipelines.

Considering all the favorable factors, it is conceivable that gas range sales in 1953 could come close to the 3,000,000 sold in 1950 — the record year.

Most of the factors that brighten the range picture also seem to point to a surge in the sales of other gas appliances.

Clothes dryers and incinerators mean new business

Gas clothes dryers will undoubtedly achieve an all-time high this year. The dryer, a comparatively new member of the gas appliance family, presents no selling problem. The biggest problem has been production . . . with manufacturers barely able to keep pace with demand. With the possibility of increased steel supplies becoming available and with a number of manufacturers adding dryers to their lines for the first time this year, production may be adequate.

Gas incinerators for on-the-premises disposal of garbage and trash are also in demand in many parts of the country. Incinerator manufacturers have had problems, similar to those of the dryer makers — mostly traceable to inadequate metal supplies. Here again, increased steel allocations will permit a step-up in production which will enable the industry to go on to a new sales record in 1953.

Another gas appliance which finished 1952 with a healthy spurt in sales is the automatic water heater. Like other appliances, water heaters slumped through the first half of 1952. At the halfway mark manufacturers' shipments were off 21 per cent, but the third quarter went 33 per cent over the previous year's figures and the fourth quarter enabled the industry to equal the 1951 totals.

A large part of the gain is attributed to aggressive sales promotion by manufacturers to drive home to consumers the economy and performance features of the gas water heater. Promotion has directed attention to the quicker recovery of the gas-fired water heater, the ability of a 30 or 40 gallon gas water heater to do a job which would require a much larger tank with other fuels, and the work-saving aspects of adequate hot water automatically heated.

Gas house-heating shows spectacular gain

Of course the most spectacular gains in the gas industry have been made in the field of house-heating.

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The outlook for electrical appliances

summary of prospects for both appliances and equipment in the electrical field

by W. J. Donald • MANAGING DIRECTOR, AND *A. J. Nesti* • CHIEF STATISTICIAN, NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION, NEW YORK CITY

ALL signs point to another year of peak-level activity in the electrical manufacturing industry in 1953. Total volume of production should at least match the $12 billion of the 1951 and 1952 all-time production peaks, and may actually reach a new level between 5% and 10% higher.

The latest reliable 1953 estimates for various overall business indicators show continued substantial increases in addition to electric power capacity and in consumption of electric energy and a maintenance of the high levels established in the past two years for industrial production, investments, employment, earnings, construction, and consumer expenditures.

Vigorous planning needed

However, to take advantage of this favorable business climate, electrical manufacturers will have to do some careful and vigorous planning — for business will not come to all branches of the industry by itself but will rather have to be sought. There are shifts in the components of the overall business indicators, and there are other unmeasured factors which will require careful study and treatment. It is important to note some of these factors, but, first let us look at what happened in 1952 and what electrical manufacturers think will happen in 1953 in various parts of the industry.

Generation, transmission and distribution equipment has been the pacesetter of the industry with shipments increasing sharply each year to a point where in 1952 the volume was more than twice the volume in 1947. This, of course, reflects the heavy and continuous expansions that have occurred in new power capacity installed which amounted to 86 million kilowatt hours in 1952, in the quantity of power generated which reached an all-time high of 463 billion kilowatt hours in 1952, and, finally in quantity of power actually consumed — as measured by sales of electricity — which also reached a new peak in 1952. With new additions to power generating capacity, actual power generation and actual consumption of electrical energy all expected to go still higher in 1953, there is little doubt of increased shipments in generating, transmission and distribution equipment.

Insulated wire and cable, which is closely allied to the generation, transmission and distribution of power, has been following similar trends, but tempered somewhat by reduced sales of the types of insulated wire and cable going into building and utilization equipment. In 1952, sales were slightly higher than in 1951, and in 1953 they are expected to register a further slight increase.

Industrial apparatus — covering such items as motors, controls, rectifiers, welding equipment, mining and industrial locomotives, etc. — after successive increases in business in 1950, 1951, and 1952, is expected to experience a drop in shipments of about 5% in 1953. This probably reflects, to some extent, the expected drop in new industrial building.

Markets for new appliances have been barely tapped

Electric appliances, which dropped from a total manufacturers' dollar value of shipments of $4 billion in 1950 to $3-1/3 billion in 1951, and to $3 billion in 1952, are expected to reverse this downward trend and go to $3-1/2 billion in 1953.

Although appliance sales, as a whole, showed a decline in 1952, the new appliances, developed for the most part in the postwar period, experienced a rise. The markets for these products have been barely tapped and the steadily rising trend in sales is expected to continue through 1953. Evidence of the consumers' awareness of, and demand for, these new products is indicated in the rapid growth in their sales. For example, *dehumidifiers* — one of the newest appliances, grew from 25,000 units sold in 1949 to a total of 90,000 units sold in 1952; electric *clothes dryers* went from 85,000 units sold in 1949 to 450,000 units sold in 1952; *farm and home freezers*, one of the most important major appliances to be developed in the postwar period — from the standpoint of sales — showed sales of 1,140,000 units in 1952, compared with 485,000 units in 1949.

Illuminating equipment, after a sharp 15% drop in business from 1951 to 1952 is expected to recover slightly with a 5% to 10% increase in 1953. Electrical equipment and supplies for building construction — covering such products as knife switches, panelboards, wiring devices, outlet boxes, conduit fittings, fuses, etc. — are expected to decrease slightly in sales volume in 1953. This follows a 15% decrease in 1952.

Now for some of the factors that could have a considerable effect on the trends just described. First let us take the factor of construction. While new industrial and residential construction is expected to slide off 5% in 1953, commercial and public

construction is expected to make up the loss. In addition, there is every indication that existing industrial facilities — as well as commercial facilities — wil be improved for greater efficiency to combat rising costs elsewhere. This factor could affect very favorably the 1953 trends in sales of electric industrial equipment, building equipment and supplies, and illuminating equipment.

Electrical product sales lagging behind power build-up

Next, let us take the factor of utilization of electrical energy. A look at the various trends over the years will show that utilization equipment, generally, has lagged behind the generation, transmission and distribution of power. The trends in sales of appliances, illuminating equipment, and industrial apparatus have not reached the heights nor have they maintained the year-to-year increases that have been registered by the trends in added power capacity, power generation, and purchases of generating, transmission and distribution equipment. This factor might be indicative of the opportunity for manufacturers of utilization equipment for reaching already established markets in addition to new markets.

Market waiting to be sold

There is also the factor of high level employment and earnings combined with 48-½ million homes with electric service. This factor should offset the effect of any drop in new home construction as far as sales of electric appliances are concerned. People will still want more up-to-date appliances — new appliances — and more appliances. People will not only *want* but will also *need* such labor-saving electric appliances since, with employment at continued high levels, help for the home will still be scarce and expensive. With such people working and earning, there then remains simply the problem of selling.

Factor of defense plans

Finally, there is the factor of government plans in general and defense plans in particular. What these may be in 1953 can only be measured to the extent of the actual programs now in effect. It is anybody's guess as to what they might be in their full scope. However, there is no question but that they would have a strong bearing on industry performance in all of the branches. Since such plans are shaped by the very uncertain political events of the day, there is not very much the industry can do about them, except to keep itself in good working condition and be prepared to shift around as fast and as much as may become necessary.

From past experience, it can be expected that members of the electrical manufacturing industry will give full consideration to all of these factors and that the best efforts will be applied to meet and, perhaps, surpass the expected goals.

Replacement needs to stimulate sales in "saturated" areas

In addition, it is believed that the replacement needs and the demands for new and improved models of long established appliances, such as electric refrigerators, electric ranges, and electric water heaters, will stimulate 1953 sales of these products even in highly "saturated" areas. An example of this is the consumer preference for larger models of electric refrigerators. Whereas in 1935, 95% of refrigerator sales covered models *under* 8 cubic feet, in 1952, over 75% of the sales were for models of 8 cubic feet *and* over, and 20% were for refrigerators larger than 11 cubic feet.

Expect 1953 sales rise of 10% over 1952

It is generally estimated that sales of the latter appliances will show an increase in 1953 over 1952, and that this coupled with the continuing rise in sales of "new" appliances, will bring about an overall increase of more than 10%.

W. R. Dabney (center), newly-elected president of American Home Laundry Manufacturers Association, is congratulated by F. M. Mitchell (right), retiring president, and Roy A. Bradt, chairman of the nominating committee.

Home laundry manufacturers see prosperous year ahead

predict that sales of home laundry equipment in 1953 should reach 5,000,000 units

THE year 1953 should match or top the industry's all-time high attained in 1950, when sales of its products totalled 5,000,000 units, Frederick M. Mitchell, retiring president of the American Home Laundry Manufacturers' Association, asserted at its annual meeting held January 3, in Chicago. Mitchell, manager of Frigidaire Sales Corporation, Roanoke, Va., declared that final figures for 1952 would show sales of household washers, dryers and ironers aggregating close to 4,000,000 units.

"As a matter of fact, at no time since the end of World War II has our industry been free of shortages and restrictions, all to the detriment of the free, easy flow of our appliances out to the trade," Mr. Mitchell told the meeting, attended by almost 400 manufacturers and suppliers to the industry. "Nevertheless, the fall months of 1952 showed sharp increases in our sales, even some new highs. The only foreseeable limit to our sales in 1953 is shortage of materials, which is by no means as likely as it has been, because of anticipated easing of various restrictions."

Mitchell pointed to "a highly favorable inventory situation, the greatest activity, research, design and manufacturing-wise, in our industry's history, introduction of new models, new trends in design, stepped-up study in laboratories, an immense replacement market coupled with a record number of homes, general acceptance of better ways of doing the home laundering and the entrance of important new interests into our industry" as substantiation of his prediction of business in 1953 which may break all records.

1953 AHLMA Officers

President: W. Richard Dabney, vice president, Ironrite, Inc., Mt. Clemens, Michigan.

1st Vice Pres.: A. C. Scott, vice president, Apex Electrical Mfg. Co., Cleveland, Ohio.

2nd Vice Pres.: John R. Hurley, president, Thor Corp., Chicago, Ill.

3rd Vice Pres.: R. J. Sargent, manager, major appliances, Westinghouse Electric Corp., Mansfield, Ohio.

Treasurer: Howell G. Evans, senior vice president, Hamilton Manufacturing Co., Two Rivers, Wis.

Dabney heads slate of new officers

W. Richard Dabney, vice president of Ironrite, Inc., Mt. Clemens, Mich., was elected president of

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14-C WRINGER HEAD ASSEMBLY ALL LOVELL STANDARD EXTENDED TOP WRINGERS

15-C WRINGER HEAD ASSEMBLY CHAMBERLAIN OPEN TOP WRINGER

16 WRINGER HEAD ASSEMBLY *NEW* LOVELL INSTINCTIVE WRINGER

7000 Series PUMP—UNIVERSAL APPLICATION—CONVENTIONAL WASHER PUMP—NEOPRENE SEAL 7.7 G.P.M. at 1750 RPM

B108 PUMP—VERTICAL MOUNTED—QUICK BOTTOM RELEASE FOR LINT CLEANOUT—RUBBER IMPELLER. 12 GAL. PER MINUTE AT 1750 RPM

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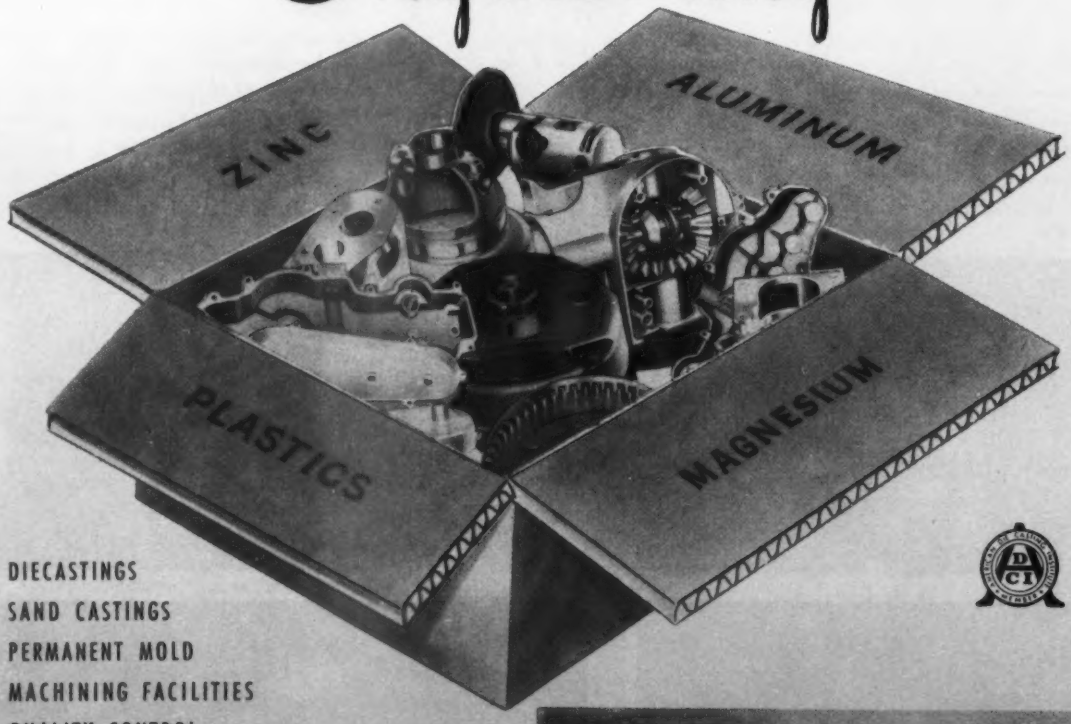

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AHLMA SNAPSHOTS

finishfotos

Photo above shows the speaker's table at the annual banquet of the American Home Laundry Manufacturers Association, held in the Casino Room of the Morrison Hotel, in Chicago, Ill.

Left: Pierce Sperry, of Sperry Rubber & Plastics; Richard Caslow, Geauga Industries; Fred Schock, Sperry Rubber.

Right: C. C. Daily, of Firestone Industrial Products; C. W. Clauser, of Maytag.

Above: Ken Ewing, of AllianceWare; C. L. Goldammer, of Geuder, Paeschke & Frey; W. B. Nixon, of Armco Steel.

Below: P. H. Korrell, of Soreng Mfg.; A. H. Gerhardt, of Norge Division, Borg-Warner; H. Y. Fisher, Soreng Mfg.

Above: Robert Sampson, of Beam Mfg.; A. B. Anderson, of Nagel-Chase; Walter Roth, of Beam; C. E. Manning, of Packard Electric.

Below: J. F. Oles, of Thor; T. A. Cowen, of Hotpoint; I. E. McWethy, of Admiral; J. E. Shipman, of Calgon.

New AHLMA Members

Caloric Stove Corporation, Philadelphia, Pa.

Kelvinator Division, Nash-Kelvinator Corp., Detroit, Mich.

Robertshaw-Fulton Controls Co., Greensburg, Pa.

Tann Corporation, Detroit, Mich.

AHLMA. The industry thus for the first time in its history of more than thirty-five years went outside its roster of makers of washers or families of home appliances to select its chief officer. Dabney's company is an exclusive producer of automatic household ironers.

"We chose Mr. Dabney at least partly in recognition of the steadily growing acceptance of the fully equipped home laundry principle, with the ironer and dryer coming as definitely into the picture as the long-familiar washer," said Roy A. Bradt, chairman of the nominating committee and vice president of The Maytag Company, Newton, Iowa.

Frederick M. Mitchell, outgoing president, was elected honorary life member of the Association, the only

AHLMA Executive Committee

Automatic Washer Division: Elisha Gray, president, Whirlpool Corp., St. Joseph, Mich. (chairman); V. F. Peterson, sales manager, home laundry equipment, Norge Division, Borg-Warner Corp., Chicago, Ill.

Conventional Washer Division: Frank Breckenridge, president, Automatic Washer Co., Newton, Iowa (chairman); John W. Ward, advertising manager, The Dexter Company, Fairfield, Iowa.

Ironer Division: L. O. Reese, president, Armstrong Products Corp., Huntington, W. Va. (chairman); Joseph Groshans, general sales manager, ironer division, Speed Queen Corp., Algonquin, Ill.

Dryer Division: Robert M. Mitchell, vice president, Whirlpool Corp., St. Joseph, Mich. (chairman); Parker H. Ericksen, director of sales, Bendix Home Appliances, Division of Avco Mfg. Corp., South Bend, Ind.

Clockwise: M. E. Murphy, G. M. Efnor, Frank Breckenridge, Automatic Washer; W. J. Schuler, Lovell; H. E. Shepard, Appliance Engr.; Frank Burczyk, Rupert; G. I. Lind, Jr., Appliance Engr.

Above: H. H. Witmer, A. C. Hohmdahl, One-Minute; Frank Anderson, New Monarch Machine & Stamping; W. H. Bowden, AllianceWare; Tom B. Hunt, Dexter.

Below: Ray Thompson, Maytag; A. F. Boone, Mullins; A. C. Scott, E. C. Buchanan, Apex; E. L. Farquharson, Universal; O. L. Earl, Acme Aluminum; Ray Noel, R. R. Proctor, Firestone.

Above: C. J. Coward, J. B. Johnson, H. L. Travis, Nash-Kelvinator; Paul N. Berner, Proctor & Gamble; Harry C. Hahn, Electrical Merchandising

Below: Charles Pearce, Canadian Westinghouse; R. A. Lawson, Monarch; Robert Biermann, Economics Lab.; E. C. Bloomberg, Monarch; L. I. Sweetland, Hotpoint; W. D. Wilkinson, Monarch Aluminum; (last man unidentified).

Some of new "tops" in AHLMA — *Standing is A. C. Scott, of Apex, new first vice president of American Home Laundry Mfrs. Assn. Continuing, left to right, are some of new members of executive committee: Elisha Gray, Whirlpool; V. F. Peterson, Norge; Frank Breckenridge, Automatic Washer; Joseph Groshans, Speed Queen; Robert Mitchell, Whirlpool; and Parker Ericksen, Bendix.*

person thus honored in its history. Mitchell, until recently home laundry equipment sales manager of the Frigidaire division, General Motors, Dayton, Ohio, now heads its Roanoke, Va., branch.

Mitchell and George P. Castner, general manager of Beam Manufacturing Co., Webster City, Iowa, who preceded him as Association head, were presented silver trays.

Craig & Daily named to head associates division

The new chairman and vice chairman, respectively, of the Associates Division, comprising sixty supliers to the industry, are T. C. Craig, district sales manager of Mullins Manufacturing Co., Salem, Ohio, and C. C. Daily, sales manager of the western division, Firestone Industrial Products Company, Akron, Ohio. Both men have their offices in Chicago.

Discuss political aspects

Industrialists and retailers alike, "as salesmen for the competitive enterprise system, have lost a great deal of ground in the past two decades, some never to be recaptured," John C. Hazen, Washington director of the National Drygoods Association, told the annual meeting of the American Home Laundry Manufacturers' Association here today. "Some of our freedoms are gone forever," he asserted.

"The socializers from the beginning wanted government control of banking, power, land and our import and export trade, with the result that we now have at least thirty-four federal agencies and corporations in some form of banking, with a total net credit of $71.1 billion. An additional group of five mixed-ownership corporations in which the federal government has an interest have outstanding loans and guarantees of $2.2 billion.

"In the field of public power, the government has quadrupled its holdings of electrical production capacity in the past twenty years. The government now holds some 460 million acres of land, about 25 percent of the total land area of our country. In the field of imports and exports, our bureaucrats here and abroad keep their hands on every move that is made," stated Hazen. *to Page 80* →

New members — *AHLMA, left, to right — J. J. Edwards, Magic Chef; Tom Gibbons, Caloric Stove; C. J. Coward, R. L. Travis, and J. B. Johnson, of Nash-Kelvinator.*

ADS OUT

International homefurnishings market

home appliance exhibitors at winter market in Chicago predict a high level of business throughout 1953

THE 1953 International Homefurnishings Market, held in Chicago the first two weeks of January, was one of the best held in recent years. A number of new home appliances were shown for the first time, and many exhibitors displayed a broader line of appliances than ever before. Most manufacturers were of the opinion that 1953 will see very high sales for all lines of appliances.

More stable business seen

At a market press conference held at The Merchandise Mart, John C. Sharp, president of Hotpoint Company, predicted more stable business in 1953 than during 1952. He pointed out that "basically, this can be traced to the fact that the industry has lower inventories at factory, distributor and dealer levels than a year ago. This means that there will be a better environment for real selling, and less pressure on retailers to resort to distress selling practices, such as price cutting and exorbitant tradeins."

Sharp also predicted that 1953 would be highly competitive, but "there will be *plenty of business for those who can sell.* Business indicators point to ample buying power, and history has shown that consumers respond to effective selling activities."

Bendix shows washer-dryer

A revolutionary new home laundry appliance that drys as well as washes clothes in one continuous automatic operation was introduced by Bendix Home Appliances. Called the Duomatic, the new appliance may be used separately as either a washer or dryer, or as both *(see January 1953* finish, *Page 13).*

Servel's new refrigerator makes ice automatically

A new type of home refrigerator that freezes ice cubes without trays, stores the cubes in a basket, and replaces them as they are used was shown by Servel, Inc. *(see Page 15).* The entire operation of making, storing and replenishing the crescent-shaped cubes is completely automatic.

Super-sonic washing machine

At the American Furniture Mart, Fairbanks Ward Co. introduced a new electric washing machine that cleanses clothes by super-sonic sound waves. Hundreds of sound waves per second vibrate the water and shake dirt loose from clothes. A company official indicated that the

to Page 58 →

finishfotos from market →

Miss Charlene Beck demonstrates American Kitchens new "Roto-Tray" dishwasher exhibited at The Merchandise Mart.

Exclusive finishfotos

from

International Homefurnishings Market

Left: Miss June Kitson shows how a housewife can look down into Detroit-Michigan's "Top-Vue" oven.

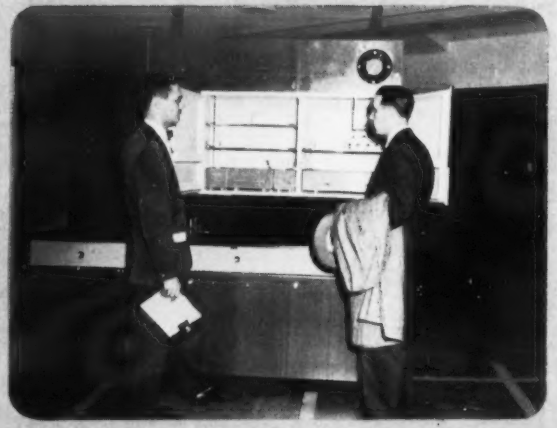
Right: Julius Klein, president of Caloric Stove, demonstrates how easily their oven door handle can be changed. Caloric is offering a choice of 12 gay colors for oven door handles.

Right: Rex Conley (right), of Chattanooga Implement, demonstrates their new barbecue grill for Mrs. Conley and Wes Jacoby.

Right: Pierre Vinet, second from left, shows Roper's new built-in oven and surface units to dealers.

Left: Ralph Hines, left, of Samuel Stamping & Enameling, watches another demonstration of their new built-in oven.

Right: Landers, Frary & Clark displayed their first deep fat fryer, and a new model vacuum cleaner.



Left: Robert Clark, of General Electric, points out important features of GE's new refrigerator-freezer of the future to a GE dealer.

Right: In their expanded space at Merchandise Mart, Temco displayed a cutaway model of their new clothes dryer.

Left: Speed Queen introduced automatic washer and dryer as two new additions to their laundry equipment line.

Right: Cribben & Sexton's new "Dishwasher-in-a-Range" received a lot of attention from dealers attending the winter market.

Which One?

They look alike—they *are* identical—yet one of these parts will wind up as a reject while the other will be the pride of the finishing room.

They both look clean and ready for finish—the difference is that one is "chemically" cleaned with job-adjusted Northwest products while the other got by with a fast dip and rinse.

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What home appliance

report by *finish* editors from a personal surv

Roper — "Our new gas dryer has had good acceptance in the Chicago area, and we are now going to promote it nationally Have also had good reaction to our new 30-inch range, particularly good for LP gas business. Business will be equal to or better than in '52, but indications are for better stabilization (inventories, prices, etc.) — **Pierre Vinet,** director of sales promotion.

Deepfreeze — "There will be good steady 12-month appliance sales volume. Aggressive selling is expected to wipe out the 'seasonal' factor in refrigerator and other appliance sales" — **Ben G. Sanderson,** general sales manager.

Thor — "Expect tremendous increase because of changes and styling and broader line of products" — **Joseph Schneider,** ass't central div. sales mgr.

James Industries — "Our company is going into a program of national advertising with greatest kick-off of any dishwasher promotion in history — **Charles Rimmer,** regional sales manager.

Revco — "Production and sales in '53 will be doubled over '52. Have just added three new buildings to present factory. Have program lined up which permits expenditures for continued expansion" — **George Burdick,** sales department.

Lindemann & Hoverson — "We anticipate a very good year, and are expanding our activity in promotion and advertising fields. We have never caught up on demand for 30-inch range with 23-inch oven which was introduced a year ago" — **Jack Plano,** general sales manager.

RCA-Estate — "Dealers enthused about the RCA-Estate line, and we are completely sold out for first six months" — **W. L. Hemsworth,** central region div. mgr.

Temco — "Have had very good results with many distributors stopping in to see new models. Expect good increase in sales over 1952." — **Cecil Oakley,** sales manager.

Duchess — "Very good market. Conventional washer sales in '53 will more than double '52" — **Jules Alexandre,** sales manager.

One-Minute — "Good market. Year starting out excellent. Look for big comeback in wringer washers this year" — **H. Witmer.**

Ryan Industries — "The 1953 market has been the most wonderful market I ever attended, and I have been to many of them"—**A. H. Rose,** president.

Dixie Products — "We feel the sales picture for 1953 will be greatly improved over 1952. Dealer attitude is fine. Prices are firm. More actual sales than at previous markets" — **Robert Rymer.**

Westinghouse — "Sales for '52 were within 2% of the 1950 top. Westinghouse expects 10% increase on overall appliance sales, but only after a stepped up, hard intensive selling program" — **J. H. Ashbaugh,** vice president.

anufacturers say

the International Homefurnishings Market

General Electric — "Reaction to appliance line best since the war. New refrigerator line highly acceptable from appearance, price features. Very strong feeling for automatic defrosting. Upright freezers are the coming thing" — **Jack F. McBride,** manager of marketing, major appliance division.

Bendix — "Our new Duomatic (washer-dryer) has had fine reception, and the intense interest in our kitchen line pleases us. We expect to be a real factor in kitchen appliances by the end of 1953" — **W. C. Jones,** merchandising manager.

Hamilton — "Activity has been busy since announcement of new automatic washer to our laundry line " — **Norm Johnson,** sales department.

Chattanooga Implement — "Very active market, especially on barbecue grill which has had very good acceptance. Looking for a banner season, — **Rex Conley, Jr.,**

Conlon Bros. — "About 85% of sales on our conventional washers have been on color models" — **Tom Conlon,** president.

Marvel Metal — "The kitchen cabinet market looks excellent. Buyers seem to be in a buying and spending spree, with business running well ahead of a year ago" — **M. J. Berz,** president.

Caloric — "A choice of 12 gay colors on the hardware of our 1953 gas range line was very well accepted. Caloric is looking forward to another increase in sales in '53 over '52" — **Julius Klein,** president.

A. O. Smith — "Market looks good. Expansion program of building and expanded lines speaks for our company's confidence in the market for 1953" — **L. H. Huber,** sales department.

Palley — "Attendance and interest of appliance distributors and big retailers shown by their coming back to view demonstrations for a second time" — **Wm. Klinkenstein,** sales promotion mgr.

Cory — "We are well pleased with public reaction to new room air conditioning unit being produced at Cory's new 52,000 square foot plant in Grayslake, Ill." — **Harry Roehm,** domestic division sales manager.

Victor Products — "Extremely pleased with reception of new upright freezer, as well as for ¾-ton room air conditioner for which we have completely sold all production for 1953. As result of showing upright freezer have created three-month backlog. Also booked considerable orders on new dehumidifiers which were new item at June market. . . We have tripled dehumidifier production" — **J. K. Noel,** vice president of sales.

Tennessee Stove — "Best market we have ever had" — **Hardwick Caldwell, Jr.,** vice president and sales manager.

An addition to Frigidaire's expanded electric range line is this deluxe 30-inch range with oven large enough to hold six pies or 10 loaves of bread.

Latest addition to Maytag's line of home laundry appliances is their new electric clothes dryer.

Many cooking operations are possible with new Westinghouse combination buffet cooker and French fryer.

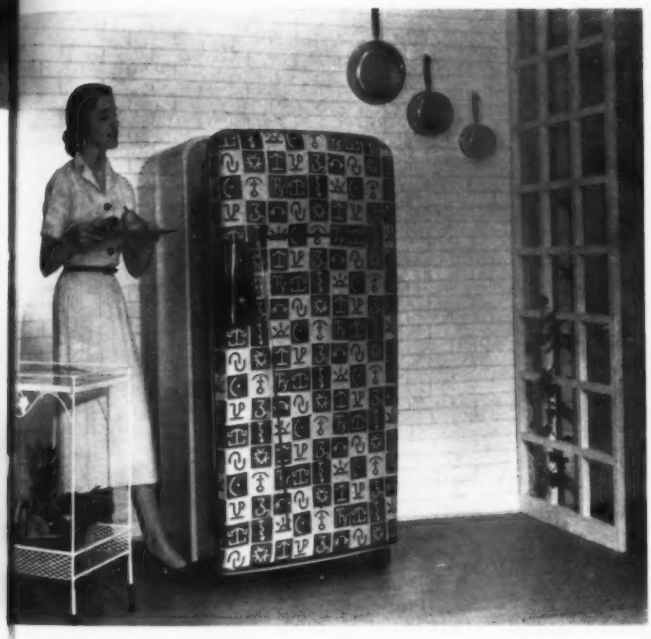
Howard Scaife, sales manager, shows John C. Sharp, president of Hotpoint, how their new room air conditioner operates.

General Electric's new upright home freezer stands 71 inches high, and takes up about same amount of wall space as a large refrigerator.

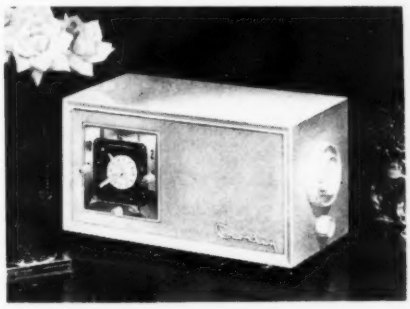
Odin's new gas range features electrical rotisserie cooking as a companion feature in deluxe model Beautyrange.

Kelvinator's new wall cabinets are installed as easily as hanging a picture. Units have sliding doors.

This Bendix electric range has a deepwell cooker which is convertible to surface unit at will, and is equipped with a French fryer basket.



New "decorator" refrigerator of International Harvester takes only a yard and three-quarters of fabric to match kitchen curtains, walls, etc.



Crosley clock radio features radio and buzzer alarms, an appliance outlet, and a slumber switch.

New automatic home laundry produced by Hotpoint has matched automatic clothes washer and electric clothes dryer.

Kitchen decorating guidance is a new service that Youngstown Kitchens dealers will offer their customers under a "color in the kitchen" program.

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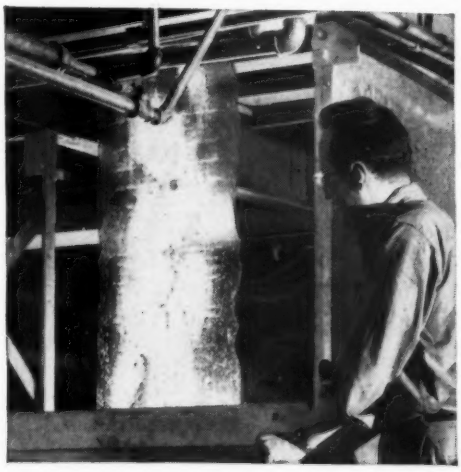

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- "The first thing we noticed with Flake Frit was that it practically eliminated hazardous dust in the mill loading process."
- "We're getting much more uniform set characteristics . . ."
- "Our inspectors say we are getting a more uniform bubble structure since we started using Flake Frit."
- "Our whole process has generally improved . . . looks like Flake Frit is the answer."
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WHAT'S GOOD FOR THE INSIDE
IS BEST FOR THE OUTSIDE...
PORCELAIN ENAMEL ON U·S·S Vitrenamel BASE

PORCELAIN-ENAMELED steel has long been used for the interiors of most fixtures like these. Now more and more manufacturers are finding that the same finish that gives such a fine surface for the inside is best for the outside, too.

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To obtain the greatest durability and finest appearance for finished products, many enamelers have standardized on U·S·S Vitrenamel. The ideal base material, U·S·S Vitrenamel is designed to provide a product possessing the essential chemical and physical properties, and having a surface texture that will insure maximum adhesion.

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UNITED STATES STEEL

PHOTO COURTESY CHICAGO HERALD-AMERICAN

As up-to-date as a jet plane is this Fairbanks Ward washing machine that cleanses clothes by super-sonic sound waves. The new product is being demonstrated by Miss Joyce Carroll.

→ *from Page 47*

new washing machine will be field-tested in about 500 homes before plans are made for promoting the revolutionary new unit.

"Dishwasher-in-a-range" featured by Cribben & Sexton

Just a year after introducing their Wheel-about storage cart which disappeared into their Universal gas range when not in use, Cribben & Sexton Co. brought out their latest appliance — a "Dishwasher-in-a-Range" which the company says is another major step toward simplifying home management routine. The dishwasher, made by James Mfg. Co., may be rolled into and out of the Universal gas range — just as the Wheel-about storage cart.

Harvester introduces "decorator" refrigerator

One of the newest appliances, fashion-wise, introduced during the market was International Harvester's new "Decorator" refrigerator *(shown on Page 55)*.

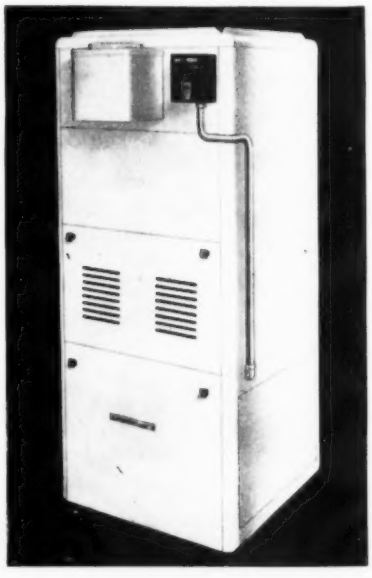
All the housewife has to do is take a yard and three-quarters of fabric (to match kitchen curtains, draperies, tablecloth, walls), a kitchen knife and some scissors, and she has a "new" IH refrigerator.

The first step in changing the fabric front of the refrigerator is to remove molding around and on front of door, then pull off fabric; Second step is to attach one and three-quarter yards of fabric to adhesive around edges of door. Third step is trimming excess fabric with scissors. Fourth step is to replace molding on sides and front and replace plastic "push plate" on front.

Perfection shows air conditioning equipment

After introducing their new appliance models at the market, Perfection Stove Co. introduced their new line of year-around air conditioning equipment at the National Association of Home Builders' meeting, also held in Chicago during January.

Left: Admiral's portable moisture conditioner is said to solve the dual problem of uncomfortably high humidity in the home in the summer and excessively dry air in winter.



Right: One of Perfection Stove's newest products is this gas-fired air-conditioning furnace which stands 60 inches high and occupies about as much floor space as an occasional chair.

*THE DOG DIDN'T LIKE IT

***IT'S A GOOD STORY... WITH A GOOD MORAL**

A couple of scientists worked for years in an effort to produce the perfect dog food. Finally, after exhaustive research, they announced that they had achieved their purpose, THE perfect dog food.

There was, however, one important hitch . . . the DOGS didn't like it.

Now, let's get on the serious side

You have to know that we fully recognize the tremendous importance of the work being done by our own and the many other very capable ceramic engineers.

Beyond question, Ing-Rich could not produce its highly regarded FRITS without the valuable work being done by our very competent staff of ceramic research engineers . . . but . . . there is also to consider that

ING-RICH FRIT
is tried on the Dog and . . .
he likes it!

It should be important to you that Ing-Rich Frit is plant tested frit. Operating, as we do, one of the largest job enameling plants in the country, our day in and day out experience in using our own Frits gives us that important PLUS . . . the "know how" that comes from practical experience. Bear in mind that this is of tremendous value to our ceramic engineers. They "try it on the dog" and our outstanding reputation in the job enameling field proves that "the dog likes it"—and also should prove to you the tremendous advantages of Ing-Rich Plant Tested Frits.

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OFFICES, LABORATORY AND PLANT
FRANKFORT, INDIANA

ING-RICH
PORCELFRIT
"The Plant Tested Frit"

Report of progress on test standards for porcelain enamel

Committee C-22 of ASTM is working toward the establishment of standards and specifications for porcelain enamels and ceramic coatings for metals

by J. T. Roberts • CRANE COMPANY; MEMBER OF EDUCATIONAL GROUP FOR COMMITTEE C-22

IN THE enameling industry, there is need for the establishment of adequate codes, standards, and specifications covering the use of porcelain enamels, ceramic and ceramic-metal coatings for metal.

This need has been apparent for some time. In 1938, C. A. Masterman[1] said that it would be a happy day if there could be established for cast iron and sheet steel enameled goods an *agreed code for quality* subject to *quantitative tests* in respect to four or five qualities regarding finish. In 1944, B. L. Wood[2] stated that so far as building *codes* are concerned, regulations providing for use of porcelain enameled steel for building exteriors are conspicuous by their absence. He blamed this condition on the lack of industrial *standards*. Dr. A. I. Andrews[3] about that same time said that the greatest handicap which porcelain enamel faces in its adaptation to new products is the absence of reliable information concerning its properties. The architectural program needs such data specifications, and test methods.

The Porcelain Enamel Institute and ASTM Committee C-22 on porcelain enamels, ceramic and ceramic-metal coatings for metals have recognized this need and are working toward the development of these standards and specifications — the P.E.I. since the early 1930's, and Committee C-22 since 1949.

In this article is presented a description of Committee C-22 concerning its scope, present membership, current activities and accomplishments.

An ASTM membership to this committee is open to those who may be interested in its purpose and work.

GENERAL DESCRIPTION OF C-22

At present Committee C-22, with W. N. Harrison, of National Bureau of Standards, as chairman, and D. G. Bennett, of the University of Illinois, as vice chairman, and G. H. Spencer-Strong, of Pemco Corp., as secretary, has a membership of 35. The scope of the committee, which is composed of three working sub-committees, is to stimulate research, formulate definitions, methods of test, and specifications pertaining to porcelain enamel, ceramic and ceramic-metal coatings for metals.

DETAILED DESCRIPTION OF C-22

Sub-committee I — on research

Scope: Promoting fundamental and other research not included in the scope of other sub-committees; stimulate, implement and correlate research in the other sub-committees; collect, review and collate research data in related fields of scientific endeavor; establish channels of communication with other committees of the Society and other agencies which are concerned with research in the field of porcelain enamel, ceramic and ceramic-metal coatings for metals; and be responsible for the research section of the annual report of Committee C-22.

Membership: W. B. Anderson, Titanium Pigment Corp., New York, N. Y.; D. G. Bennett, University of Illinois, Urbana, Illinois; E. P. Bolin, Chicago Vitreous Enamel Product Co., Cicero, Ill.; J. J. Canfield, Armco Steel Corp., Middletown, Ohio; W. A. Deringer, A. O. Smith Corp., Milwaukee, Wis.; E. C. Dexheimer, Nesco, Inc., Granite City, Ill.; J. H. Gregory, Sears, Roebuck & Co., Chicago, Ill.; E. E. Howe, Chicago Vitreous Enamel Product Co., Cicero, Ill.; H. A. Kafarski, Ford Motor Co., Detroit, Mich.; A. F. Matejczyk, The O. Hommel Co., Pittsburgh, Pa.; W. W. Kriegel, North Carolina University, Raleigh, N.C.; G. H. McIntyre, Ferro Corp., Cleveland, Ohio; L. S. O'Bannon (chairman), Battelle Memorial Institute, Columbus, Ohio; R. S. Olsen, Armour Research Foundation, Chicago, Ill.; J. T. Roberts, Crane Co., Chicago, Ill.; J. A. Schiefferle, General Electric Co., Erie, Pa.; G. H. Spencer-Strong, Pemco Corp., Baltimore, Md.; B. J. Sweo (secretary), Ferro Corp., Cleveland, Ohio; U. S. Dept. of Navy, Bureau of Ships, Washington, D. C.

Projects being studied: Two task groups are carrying on investigations on the development and appraisal of a thermal shock test and an investigation concerning the short- and long-term effect of porcelain enamels on underlying metals when subjected to elevated temperatures.

Sub-committee II—on nomenclature

Scope: Preparation and compilation of nomenclature and definitions of terms required in the formulation of standards and the development of comprehensive glossary of terms for the industry.

Membership: V. D. Frechette, New York State College, Alfred, N. Y.; J. H. Gregory, Sears, Roebuck & Co., Chicago, Ill.; E. E. Howe (chairman), Chicago Vitreous Enamel Product Co., Cicero, Ill.; G. H. McIntyre, Ferro Corp., Cleveland, Ohio; J. C. Richmond, National Bureau of Standards, Washington, D. C.; J. T. Roberts (secretary), Crane Co., Chicago, Ill.; G. H. Spencer-Strong, Pemco Corp., Baltimore, Md.

Projects being studied: This subcommittee is engaged in the prepa-

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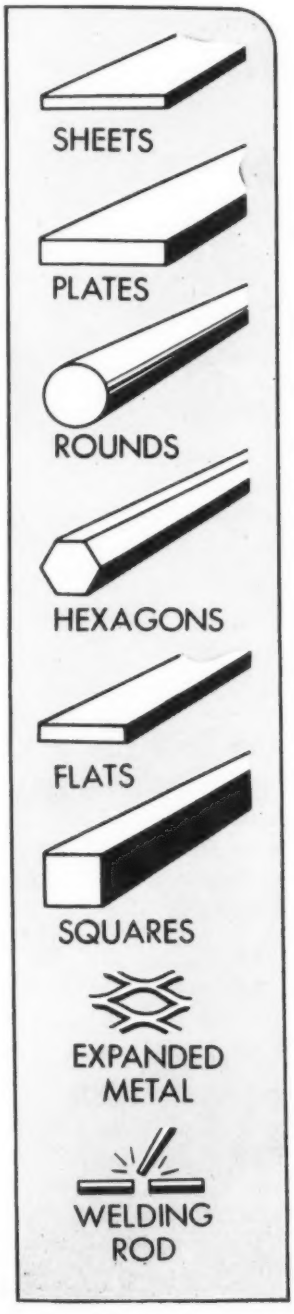
Heat and Corrosion Resistant Alloy Specialists



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CHROME-NICKEL ALLOYS

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Your past favors have been appreciated and we are looking forward with pleasure to working with you in a prosperous future.

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Misco K

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Misco B

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Type 446

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17% Cr
Type 430

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Symposium on Porcelain Enamel at ASTM Annual Meeting

At the 1953 annual meeting of the American Society for Testing Materials, ASTM Committee C-22 will sponsor a symposium on "*Porcelain Enamels and Ceramic Coatings as Engineering Materials.*" The ASTM annual meeting will be held June 29 through July 3, at Chalfonte-Haddon Hall, Atlantic City, N. J.

ration of a revised set of definitions, the original set having been published as a Tentative Standard C-286-51T in the 1951 Supplement to Book of ASTM Standards part 3, pages 104-11 inclusive. Two definitions which are being considered for revision are "tearing" and "hair-lining."

Sub-committee III—on test methods and specifications

This sub-committee, with R. F. Bisbee, of Westinghouse Electric Corp., Mansfield, Ohio, as chairman, and J. J. Canfield, of Armco Steel Corp., Middletown, Ohio, as secretary, is divided into three sections, the first two of which are at present combined. The scope of this sub-committee is to formulate methods of tests and specifications needed for the evaluation and control of raw materials, materials in process and finished products — this to be accomplished by the review of existing standards and data from any recognized source and by the initiation of new investigations as required. Close coordination is to be maintained with all other standardizing agencies.

Sections 1 and 2 — raw materials and process

Scope: Formulation of methods of tests and specifications needed for the evaluation and control of raw materials.

Membership: W. B. Anderson, Titanium Pigment Corp., New York, N. Y.; D. G. Bennett, University of Illinois, Urbana, Ill.; E. P. Bolin (secretary), Chicago Vitreous Enamel Product Co., Cicero, Ill.; M. J. Bozsin, Ferro Corp., Cleveland, Ohio; J. J. Canfield, Armco Steel Corp., Middletown, Ohio; W. A. Deringer (chairman), A. O. Smith Corp., Milwaukee, Wis.; E. C. Dexheimer, Nesco, Inc., Granite City, Ill.; J. F. Matejcyzk, The O. Hommel Co., Pittsburgh, Pa.; R. S. Olsen, Armour Research Foundation, Chicago, Ill.; F. R. Porter, Inland Steel Co., E. Chicago, Ind.; J. A. Schiefferle, General Electric Co., Erie, Pa.; G. H. Spencer-Strong, Pemco Corp., Baltimore, Md.; J. B. Willis, Pemco Corp., Baltimore, Md.

Projects being studied: Attempts are currently being made to develop standard tests for the following:

1. Reflectivity and Coefficient of Scatter
2. Tearing
3. Evaluation of Enameling Iron
4. Water for Mill Addition
5. Consistency of Mill Additions
6. Torsion Resistance
7. Fusibility by Flow Button Method
8. Evaluation of Set Characteristics of Clay

Section 3 — finished products

Scope: Formulation of methods of tests and specifications needed for the evaluation of finished products.

Membership: D. G. Bennett, University of Illinois, Urbana, Ill.; U. S. Dept. of Navy, Bureau of Ships, Washington, D. C.; J. H. Gregory (chairman), Sears, Roebuck & Co., Chicago, Ill.; A. L. Johnson, Universal-Rundle Corp., New Castle, Pa.; D. B. Judd, National Bureau of Standards, Washington, D. C.; H. A. Kafarski, Ford Motor Co., Detroit, Mich.; L. S. O'Bannon, Battelle Memorial Institute, Columbus, Ohio.; R. Skagerberg, Housing & Home Financing Agency, Washington, D. C.; J. C. Richmond (chairman), National Bureau of Standards, Washington, D. C.; J. T. Roberts, Crane Co., Chicago, Ill.; F. A. Petersen, Hunter-Thomas Associates, Cleveland, Ohio.; G. H. Spencer-Strong, Pemco Corp., Baltimore, Md.; B. J. Sweo, Ferro Corp., Cleveland, Ohio; A. W. Treptow, Bell Telephone Laboratories, Inc., Murray Hill, N. J.

Projects being studied: Eight subjects are being investigated which include the following:

1. Abrasion test
2. Thickness test
3. Thermal Shock test
4. Test for Chemical Ware
5. Scratch test
6. Test for Continuity of Coating
7. Metal marking test
8. Navy Impact test

ACCOMPLISHMENTS

During the past two years since the Committee has been in existence, five tentative test methods have been adopted by the Society. These are as follows:

1. Tentative Sieve Test for Wet Milled and Dry Milled Porcelain Enamel (C285T)
2. Tentative Method of Test for Resistance of Porcelain Enameled Utensils to Boiling Acid (C283T)
3. Tentative Test for Acid Resistance of Porcelain Enamels (Room Temperature Test) (C282T)
4. Tentative Method of Test for Impact Resistance of Porcelain Enameled Utensils (C284T)
5. Tentative Definitions of Terms Relating to Porcelain Enamel (C286T)

Two tests, one for warpage, and one for adherence have been approved by the sub-committee, and are ready for C-22 ballot.

VALUE TO INDUSTRY

Mr. Masterman[1] in 1938 stated that "In the ideal state, it should be possible to quote for any given article a minimum quality (A,B,C,D, etc.) in several categories (acid resistance, abrasion resistance, alkali resistance, etc.) consistent with the service requirements of the parts."

ASTM Committee C-22 is working toward the attainment of this ideal state to which Mr. Masterman refers. A number of tests have already been standardized. Additional tests are being processed for adoption. With these tests and the accumulation of the desired data, the preparation of adequate codes and specifications can be realized.

BIBLIOGRAPHY

(1) Anon., "Problems of the Users of Vitreous Enameled Ware", Gas Journal 224, 645, (1938)

(2) B. L. Wood, "Building Codes and the Porcelain Enamel Industry", Enamelist 21 (4) 9-10; 42-44 (1944)

(3) A. I. Andrews, "Relation of Test Methods to Quality Standards for Production", Finish 2 (2) 18-20 (1945)

COOLERATOR COMPLETES NEW ENAMELING PLANT

Construction of a million-dollar porcelain enameling plant at The Coolerator Company's refrigerator plant in Duluth, Minn., has just been completed. In addition to Coolerator's own requirements, there will be a substantial reserve capacity, and the company will also take on porcelain work from other firms.

FRANK ZVANUT TO CABOT

Godfrey L. Cabot, Inc., Boston carbon black manufacturing firm, has announced the appointment of Frank Zvanut, formerly with Ferro Corp., as sales engineer for its recently acquired subsidiary, Georgia Pigment Co.

ADS OUT

We've specialized in stampings for the washing machine industry

THE problem of supplying washing machine tubs has been turned over to us by leading manufacturers time and time again.

We're glad to have the reputation of leadership in the field. And we accept the responsibility. You will find Mullins ready always with the best technical knowledge and equipment. You will find an alert, progressive attitude—an honest belief that the problems of your business are our problems too.

In planning for the future or for the most economical source for current production, consult with us. Mullins has made many notable contributions to the industry's progress and hopes to make many more.

Mullins

MULLINS MANUFACTURING CORPORATION

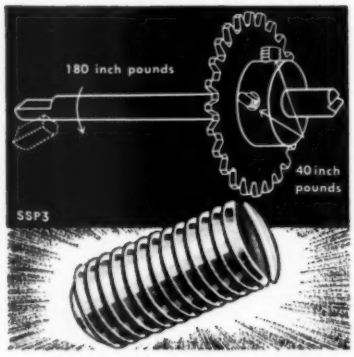
SALEM, OHIO

Design Engineering Service, Large Pressed Metal Parts, Porcelain Enameled Products

New Supplies and Equipment

B-11. New set screws permit increased holding power

New The cup point of a new set screw for use in appliances is so designed that the user is able to obtain greatly increased holding



power with the same amount of setting torque. In the test illustrated, a gear was locked to the shaft by two new screws tightened with a setting torque of 40-inch pounds. 180-inch pounds applied to opposite end of shaft, broke it—while the gear, locked to the shaft with the new set screws, still held.

More Information

For more information on new supplies, equipment and literature reviewed here, fill out the order form, or write to us on your company stationery.

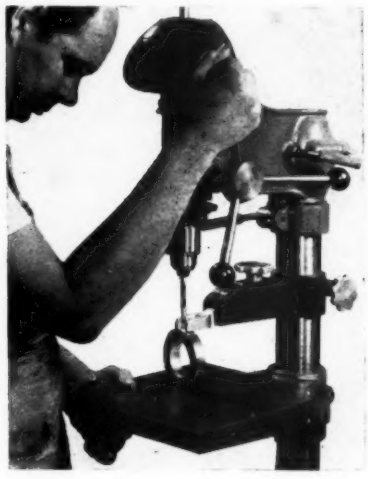
B-13. Die-cut glass fiber insulation

New A new thermal and accoustical insulation of glass fibers is available in die-cut form, faced and ready to apply to appli-

ances and other products. Other advantages include saving on storing, handling and applying. Available in blanket rolls in widths of 18″ to 72″, plain or with a choice of 5 facings (some vapor barrier).

B-14. Drill press clamp holds odd-shaped articles securely

New This drill press clamp is designed to fit all popular makes and models of drill presses, and is said to hold virtually any



shaped object square and secure for accurate drilling. It clamps right on the drill column, and may be easily adjusted.

B-12. Solderless wire terminator for the appliance industry

New Especially suited for the home appliance industry is this new automatic wire terminator for applying solderless terminals to wire. It is capable of applying terminals and connectors at rates up to 4000 per hour.

The new unit is designed for accurate mass production of precision wire terminations. Also, no capital investment is required on the part of the user of this machine. It is provided on a loan basis on receipt of an order for specified quantities of AMP solderless terminals.

B-15. Self-ventilating buff

New A new self-ventilating buff enables faster buffing and reduces buff wear. It may be used for hand or machine operation.

This new buff is said to permit operating wheels at high speeds and to apply greater pressure between the work and the wheel.

B-21. Process for preparing aluminum surfaces for welding

New A new process, known as the Alkalume process, prepares aluminum surfaces for welding by thoroughly removing all soils and oxides without harming the metal, thereby reducing surface resistance to a value of 0 to 10 microhms. In addition to eliminating mechanical cleaning operations, the new method is said to assure more perfectly formed welds, free from cracks.

Industrial literature

201. "Handbook of Manual Materials Handling Equipment"

New This handbook, recognized as the definitive text in this field, is designed to acquaint both industry and the layman with the

terminology and basic fundamentals of casters, wheels, hand and floor trucks, pallets and skids. Price is $1.00.

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202. "The Theory and Practice of Vitreous Enamelling"

New This new 36-page publication deals comprehensively with the fundamentals of vitreous enamelling on steel and cast iron. Authored by J. H. Gray, of Stewart & Gray, Ltd., London, England, the book presents a practical description of all aspects of this subject, yet with sufficient detail of the theory of the process to serve as an introduction to the more advanced treatises. The price of the book is 10/6d., with all proceeds from sales of the book going to the Institute of Vitreous Enamellers.

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203. "Material Handling News"

New *"Lady, Lend Us Your Dog"* is the title of a current issue of *"Material Handling News"* published by a manufacturer of fork

trucks. This issue contains a case history of how one company saved $4500 a year directly and increased usable storage space by 37,000 cubic feet following the installation of a fork truck handling system. "Before" and "after" photos are included in the 14-page two-color book.

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204. Dot welding booklet

New This 8-page booklet describes the dot weld process and the advantages of this low-temperature welding process for reclaiming castings. Contains information on equipment, costs and case histories.

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205. Cleaning and phosphatizing

New A new 4-page folder lists products for metal cleaning and phosphatizing of metal surfaces prior to painting. Also contains information on rust removal, paint stripping, and deoxidizing.

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206. New eighty-page book on "Efficient Pickling"

New A new 80-page book on "Efficient Pickling" contains technical information on pickling with Rodine, plus many photos, charts and tables. Information includes cleaning and preparation of metal prior to pickling, treating the pickled metal, operation of pickling bath, analyzing the bath, suggested practices for pickling many types of metal products. The new book is *free* to *plant men* requesting it on their *company letterhead*.

---

207. Exidust cleaning system

New A new 20-page two-color booklet gives complete information on the Exidust central

EXIDUST

vacuum cleaning system for use in industrial plants.

FINISH
360 N. Michigan Ave.
Chicago 1, Illinois

Please forward to me at once information on the new supplies and equipment and new industrial literature as enumerated below:

No.____ No.____ No.____ No.____

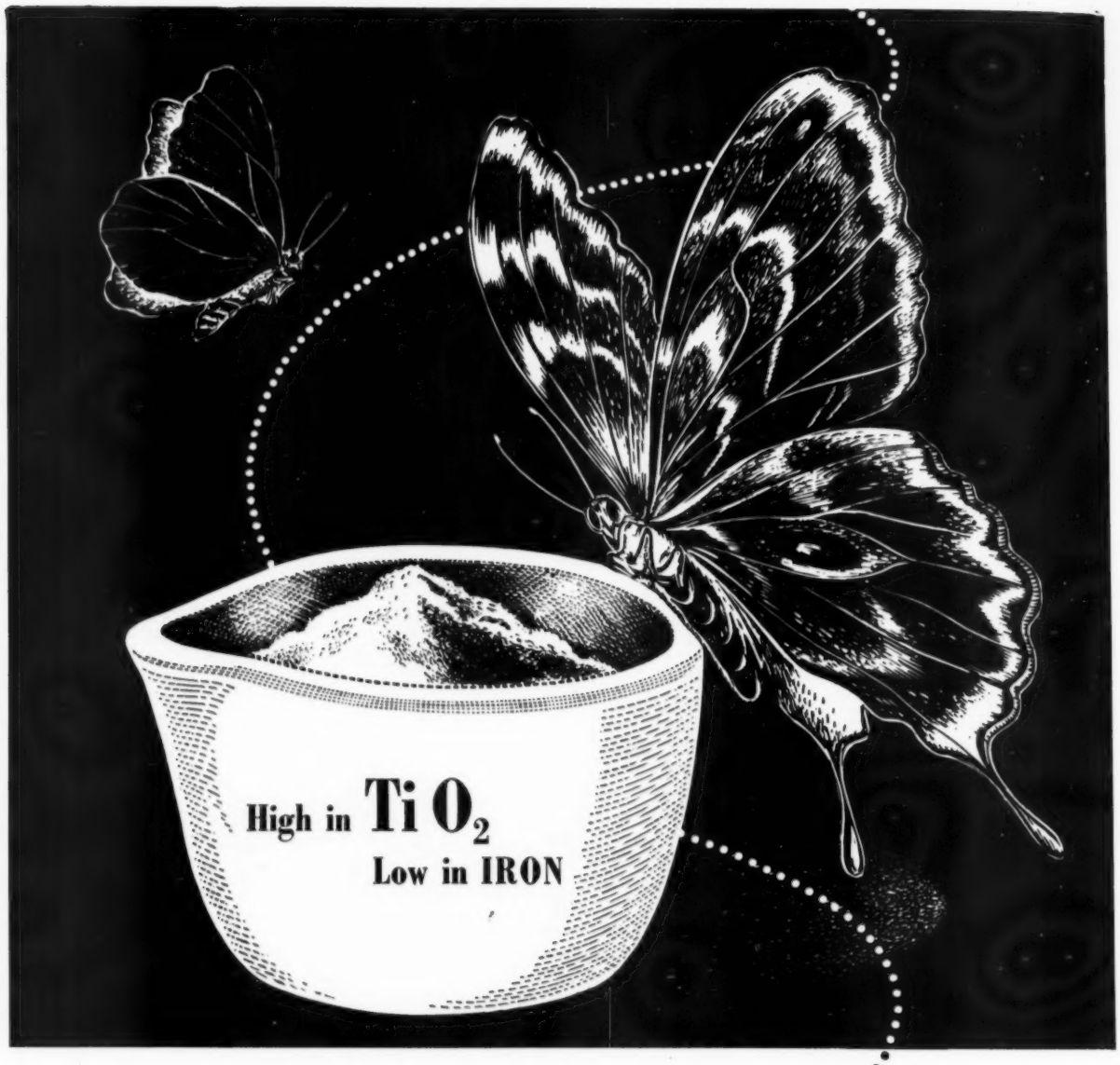
No.____ No.____ No.____ No.____

Name ____ Title ____

Company ____

Company Address ____

City ____ Zone____ State ____



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When you use Orefraction Rutiles you get clean Rutile that is free from contamination and is purity processed to the particle sizes you require—from granular to 400 mesh. Orefraction Rutile makes possible more easily controlled, more stable colors in bodies, glazes and enamels. In glazes and enamels it also promotes acid resistance.

Uses include: Glazes, Glasses, Stains, Acid-Resisting Enamels, Welding Rod Coatings, Titanium Alloys.

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FLORENCE STOVE UPS PALMER

R. G. Johnson, merchandising manager, Florence Stove Co., has announced that Harley M. Palmer, formerly sales representative in the eastern division, is now sales training supervisor. Palmer will supervise all phases of sales training, including training meetings and schools, special shows and markets, sales training contests and product functional information.

TELE KING MAKING COOLERS

Tele King Corp. has added 75,000 square feet of manufacturing space to its plant in New York City to provide for production of a line of air conditioning units for home use. The company is an independent manufacturer of television sets.

ENAMELERS TO DISCUSS HISTORY OF STAMPED SANITARY WARE

"The History and Development of Pressed Steel Sanitary Ware" will be the subject discussed at two district enamelers clubs meeting in February by C. J. Rodman, president of Alliance Ware, Inc., Alliance, Ohio.

Rodman will address the Central Club on this subject on Friday evening, February 6, at the Mansfield-Leland Hotel, Mansfield, Ohio, and the Eastern Club on Saturday afternoon, February 7, at the Sylvania Hotel, Philadelphia.

Also featured on the program of the Eastern Club will be an address on "One Hundred and One Uses for Porcelain Enamel" by C. P. Lohman, general sales manager, Pemco Corporation, Baltimore.

"EAGLE RANGE & MFG. CO."

Eagle Range & Manufacuring Co. is the new name of the company formerly known as Eagle Foundry Company, of Belleville, Illinois.

MODERN REFRIGERATOR ACQUIRES ROUND OAK ASSETS

Modern Refrigerator Co., Brooklyn, N. Y., has announced the acquisition of all physical assets of the former Round Oak Corp., of Dowagiac, Mich. The company also announced a new line of Round Oak electric and gas ranges in color.

ANDERSON HEADS ADMIRAL MARKET RESEARCH DEPT.

Robert L. Anderson has been appointed manager of the newly formed market and research department of Admiral Corporation. He formerly was research manager of the central division of American Broadcasting Co., and also served as a statistician with J. Walter Thompson Co. and Allis-Chalmers Mfg. Co. Anderson is a member of the research advisory committee of the American Marketing Association.

"THE DUCHESS COMPANY"

The Duchess Company is the new name of company formerly known as Duchess-Appliance Manufacturing Co., of Alliance, Ohio.

HAMILTON ADDS AUTOMATIC WASHER TO LAUNDRY LINE

Hamilton Manufacturing Co., Two Rivers, Wis., has announced the addition of an automatic washer to its line of home laundry equipment. The company, a pioneer manufacturer of automatic clothes dryers, has entered the washer market in order to provide its dealers and distributors with matched laundry units, according to E. P. Hamilton, president. Production is scheduled to begin within a few months.

"DIXIE PRODUCTS, INC."

Dixie Product, Inc. is the new name of the company formerly known as Dixie Foundry Co., Inc., of Cleveland, Tenn.

EDWARDS HEADS MAGIC CHEF ROOM COOLER DEPT.

Magic Chef, Inc., St. Louis, has announced the appointment of J. J. Edwards as manager of the electrical product department. His new duties will include supervision of the company's new room air conditioner line.

REPUBLIC STEEL ANNOUNCES NEW "ORE TO STORE" PROJECT

Berger Mfg. Division to produce Republic's steel kitchens

Republic Steel Corp. will manufacture and market a new line of steel kitchens under its own trade name early this spring, it was announced by C. M. White, president.

"The new steel kitchens will be fabricated by Republic's Berger Manufacturing Division at Canton, Ohio, where more than $1,000,000 has been spent in retooling Berger Plant No. 2," stated White.

R. W. Helms, general manager of sales for Berger, will direct the new steel kitchen program, which has been under development for more than a year. Republic is creating a

new nation-wide sales organization with distributors and dealers located through the United States.

Republic, the nation's third largest steel producer, is one of the few corporations in the United States with sales in excess of $1,000,000,000. Its new kitchen program will constitute the first "*ore to store*" operation in the steel kitchen industry.

More than 1,000,000 square feet of floor space are required for the myriad operations of the Berger division. It is one of the largest metal fabricating operations in the nation. For more than 50 years, Berger has produced a wide variety of steel products—ranging from air conditioning cabinets to work tables, steel office furniture, lockers, shelving and building products.

Berger Plant No. 2 is a straight-line production plant of the modern type, where steel sheets and strip for the new kitchens will be cut, formed, fabricated and finished.

C. M. WHITE

"The resources and skill of the entire Republic Steel Corp. will go into the manufacture of these new steel kitchens, White said.

PHILCO TO BUILD NEW REFRIGERATOR, FREEZER PLANT

Announcement of a new plant for the manufacture of refrigerators and home freezers at Connersville, Indiana, has been announced by William Balderston, president of Philco Corporation.

The new plant will cost approximately $4,000,000 and should be in operation before the end of 1953, Balderston said. It is designed to increase Philco refrigerator production by 50 per cent and double the company's home freezer capacity.

When in full operation, the new plant together with present Philco operations at Connersville, will give employment to approximately 3000 workers. The new plant will have 430,000 square feet of floor space.

The present Philco plant in Connersville will be re-equipped to step up capacity for the entire refrigeration manufacturing operation.

ACE CABINET CHIEF ENGR.

R. D. Bartlett, formerly chief engineer of the refrigerated cabinet division of Anheuser-Busch, Inc., is reported to have joined Ace Cabinet Corp., New Bedford, Mass., as chief engineer. He is a member of the American Society of Refrigerating Engineers.

WELBILT TO MARKET COOLERS

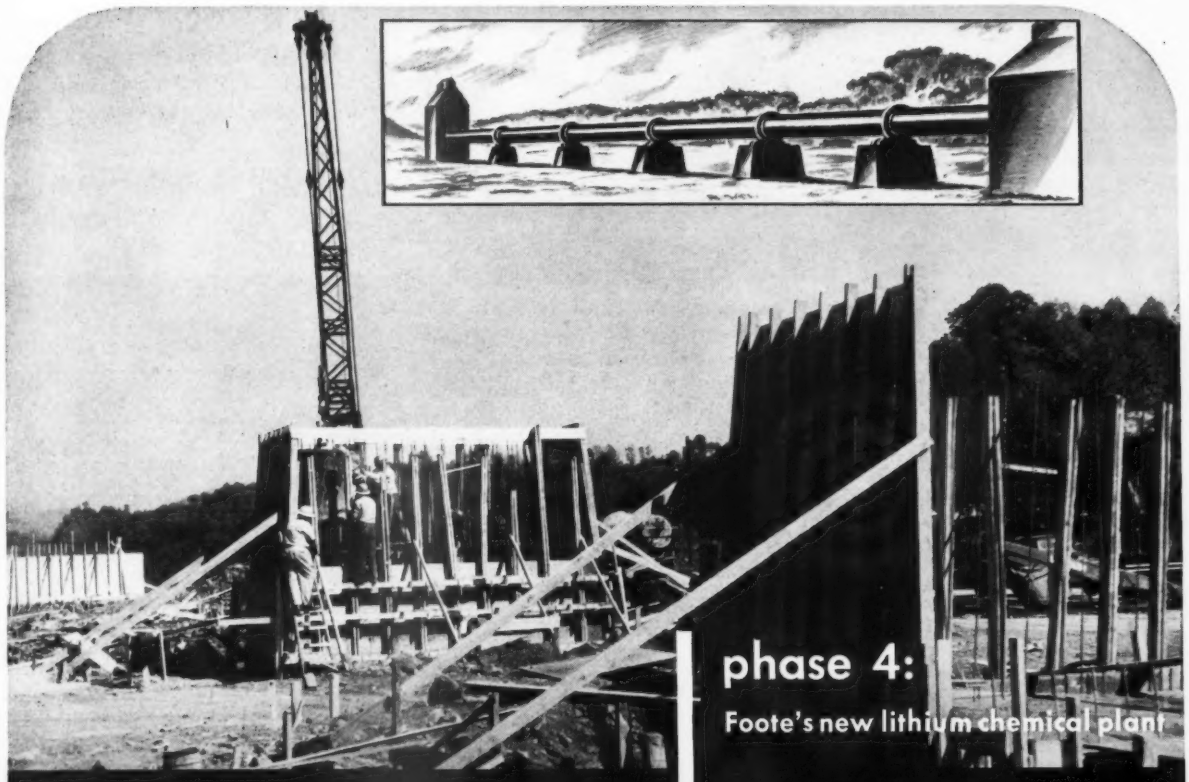
Welbilt Stove Co., Maspeth, N. Y., is planning to market a four-model line of room air conditioners, it was announced by W. M. Morris, vice president. Although another company is manufacturing the operating system, Welbit is doing the cabinet work and final assembly of the product.

HEADS MFG. AT WESTINGHOUSE SPRINGFIELD PLANT

J. H. Ashbaugh, vice president, Westinghouse Electric Corp., has announced the appointment of J. R. Weaver as manager of manufacturing and engineering for the firm's electric appliance division plant in Springfield, Mass. Weaver succeeds C. B. Dick, former works manager, who was transferred to Pittsburgh.

Keeler Brass — *representatives at winter stove meeting were M. S. Keeler II and Frank Raymond.*

Chicago Vitreous — *names new Quarter Century Club members. William Hogenson, president, presented Maurice D. O'Leary, left, vice president, and Joseph Kasperski, right, of maintenance, with "quarter century" watches.*



340 feet of kiln...

That's what we at Foote see in this picture—for by the end of January 1953, these piers will be supporting the huge kiln at the world's largest lithium chemical plant at Sunbright, Virginia. This is another step in Foote's program to double the production capacity of the entire industry in order to supply the unprecedented demands for lithium chemicals.

phase 4:

Foote's new lithium chemical plant

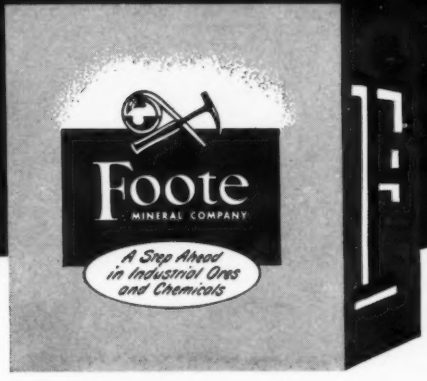
5 piers support 340′ x 10′ diameter kiln.

phase 3 — Pilot plant operations of new lithium process developed by Foote research.

phase 2 — Kings Mountain, N.C. — Mining largest known deposits of spodumene.

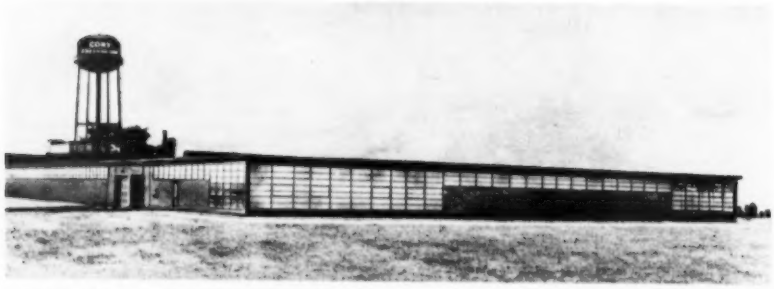
phase 1 — Continuing Foote research . . . finding new and improved uses for lithium chemicals.

FOOTE . . . LEADERSHIP IN LITHIUM



FOOTE MINERAL COMPANY

412 Eighteen West Chelten Building; Philadelphia 44, Pa.
RESEARCH LABORATORIES: Berwyn, Pa.
PLANTS: Exton, Pa.; Kings Mountain, N.C.; Sunbright, Va.



Cory's room cooler production — *has been transferred from their main plant in Chicago to this new plant in Grayslake, Ill. Located on 14½ acres, the plant contains 52,000 square feet, and is devoted to production of Fresh'nd-Aire Division products which include dehumidifiers as well as room air conditioners.*

METALWASH

A score of custom-built METALWASH machines treat a myriad of ball bearings of different types and sizes every day at the Fafnir Bearing Company Plant in New Britain, Conn.

AT FAFNIR

Because the manufacture of precision ball bearings to exacting specifications demands repeated washings, the Fafnir Bearing Company insists on METALWASH.

The rigid control exercised in ball bearing production is dramatized by METALWASH MACHINERY CORPORATION in the January issue of the *Finishing Engineer*.

Read THE FAFNIR STORY for an exciting close-up of precision ball bearing manufacture.

METALWASH *Finishing Engineer*, published quarterly, is available on request to engineers and executives to whom cleaning and finishing are operations of interest.

Write on your company letterhead for your free copy.

METALWASH MACHINERY CORPORATION
919 North Avenue, Elizabeth 4, N. J.

Representatives in principal cities

DEVILBISS HONORS EMPLOYEES

The DeVilbiss Co. recently honored 173 employees upon completion of 25 years or more of service.

FERRO UPS W. N. NOBLE

C. D. Clawson, president, Ferro Corp., has announced the appoint-

W. N. NOBLE

ment of William N. Noble as manager of operations for the Cleveland, Los Angeles and Nashville plants. Noble will coordinate research, development, manufacturing, and sales efforts in the ceramic field.

TAPPAN UPS LAMB, KYLE

Two employees of Tappan Stove Company, who have been associated with the firm's plant in Murray, Ky. (Murray Mfg. Co.), have been promoted, Alan P. Tappan, announced.

Robert M. Lamb, manager of the Murray plant, has been promoted to vice president in charge of inter-plant coordination of Tappan's three factories, and Verne O. Kyle, superintendent of the Murray plant, has been named assistant manager.

W. R. "Dick" Tappan, vice president and general manager, will act as temporary manager of the Murray plant for the next few months.

BAKER REFRIG. NAMES ENGR., MFG. V.P.'S

The appointments of Fred G. Riedel as vice president of engineering, and Charles Knox as vice presi-

dent of production manufacturing, have been announced by Otto A. Pfaff, president, Baker Refrigeration Corp., South Windham, Maine.

ADMIRAL PRODUCING FREEZERS

The first home freezers produced at Admiral's Midwest Manufacturing Corp. subsidiary in Galesburg, Ill., rolled off the production lines early in January. The first unit to leave the assembly lines was a 11 cu. ft upright model.

HAMMELL TO CHICAGO VIT

Richard H. Hammell has been appointed service engineer for Chicago

R. H. HAMMELL

Vitreous Enamel Product Co., it was announced by A. S. Ault, vice president — sales.

Hammell had served as ceramic engineer and assistant foreman of the enamel division of Tappan Stove Co., Mansfield, Ohio, since January, 1946. He was also president of the Central District Enamelers Club in 1952.

SERVEL TO MARKET AIR CONDITIONING FOR SMALL HOMES

All-year air conditioning for homes in the price range up to $14,000 will be produced this year by Servel, Inc. The company will market a new two-ton gas-fired unit capable of providing summer and winter air conditioning for an average six-room home.

John A. Gilbreath, Servel assistant vice president, in charge of air conditioning, said that the firm is planning *to boost output* of all air conditioning units *by 300 per cent* over 1952 production.

1952 GAS RANGE SHIPMENTS TOTAL 2,193,800 UNITS

Shipments of gas ranges passed the two-million mark by nearly 200,000 units during 1952. The final total, according to GAMA, was 2,193,800 units, compared to 2,356,400 for 1951.

PHILCO '52 SALES UP 18%

William Balderston, president of Philco Corp., has disclosed that the company's sales in 1952 exceeded $360,000,000—an 18% increase over 1951.

"If general business forecasts continue to be as encouraging as they are today," Balderston states, "industry will roll out the goods at an unprecedented rate. The *economic climate . . .* is certainly *favorable for record growth in almost all lines of industry.*"

EXTRUDED RUBBER AND PLASTIC PRODUCTS FOR

The Appliance Industry

FOR REFRIGERATORS AND HOME FREEZERS

Door Gaskets
Bumper Strips
Seals
Hose

FOR WASHING MACHINES AND DRYERS

Seals
Lid Gaskets
Base Gaskets
Filler Strips
Intake and Drain Hose
Bumper Strips

FOR VACUUM SWEEPERS

Bumper Strips
Special Strips

If you use extruded rubber or plastic components, it will pay you to join the leading appliance manufacturers who depend upon

The SPERRY RUBBER & PLASTICS CO.

RELIABLE PROMPT S R&P SERVICE

31 WEST 7TH STREET • BROOKVILLE, INDIANA
Telephone: Brookville 427

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BASSANO del GRAPPA • SYDNEY
SANTIAGO • LOS ANGELES OR ERIE

The Story is the Same

finish GETS ATTENTION

Only 2.4% of the total **finish** circulation goes to readers outside the boundaries of the United States — yet inquiries and requests come to **finish** and **finish** advertisers from all parts of the world — **finish gets attention!**

In this country, the story is the same — hundreds of letters are received at the **finish** offices requesting additional information on editorial material appearing in **"The Magazine of Appliance and Metal Products MANUFACTURING"** — some resulting from multiple-page feature articles, others from brief single paragraph references.

Unsolicited reports and comments from both readers and advertisers vouch for the "pulling power" of **finish** among men in **management,** and among those who **engineer** and **buy** and **use** materials, equipment and components in the Appliance and Metal Products manufacturing field.

In **finish, your** story goes to those who specify, buy and use your product or service. Furthermore, if the material, equipment, component or service is such that it requires policy decision, top management also will read your story in **finish.**

finish will get inquiries for you if you want them — it will explain present-day production, delivery problems and company policies — it will tell your product and service story to those who **buy** and **use.** For a little over two thousand dollars a year in space cost, you can tell your story continuously and effectively to all who influence purchasing in one of the country's most rapidly expanding fields.

Send for additional information on the industrial trade publication specifically designed to serve the Appliance and Metal Products MANUFACTURING field, and make your 1953 advertising pay **extra** dividends.

* Countries represented by letterheads include: Argentina – Australia – Canada – Belgium – China – Denmark – Egypt – France – Holland – India – Italy – Japan – New Zealand – Norway – Portugal – Sweden – Switzerland – Uruguay.

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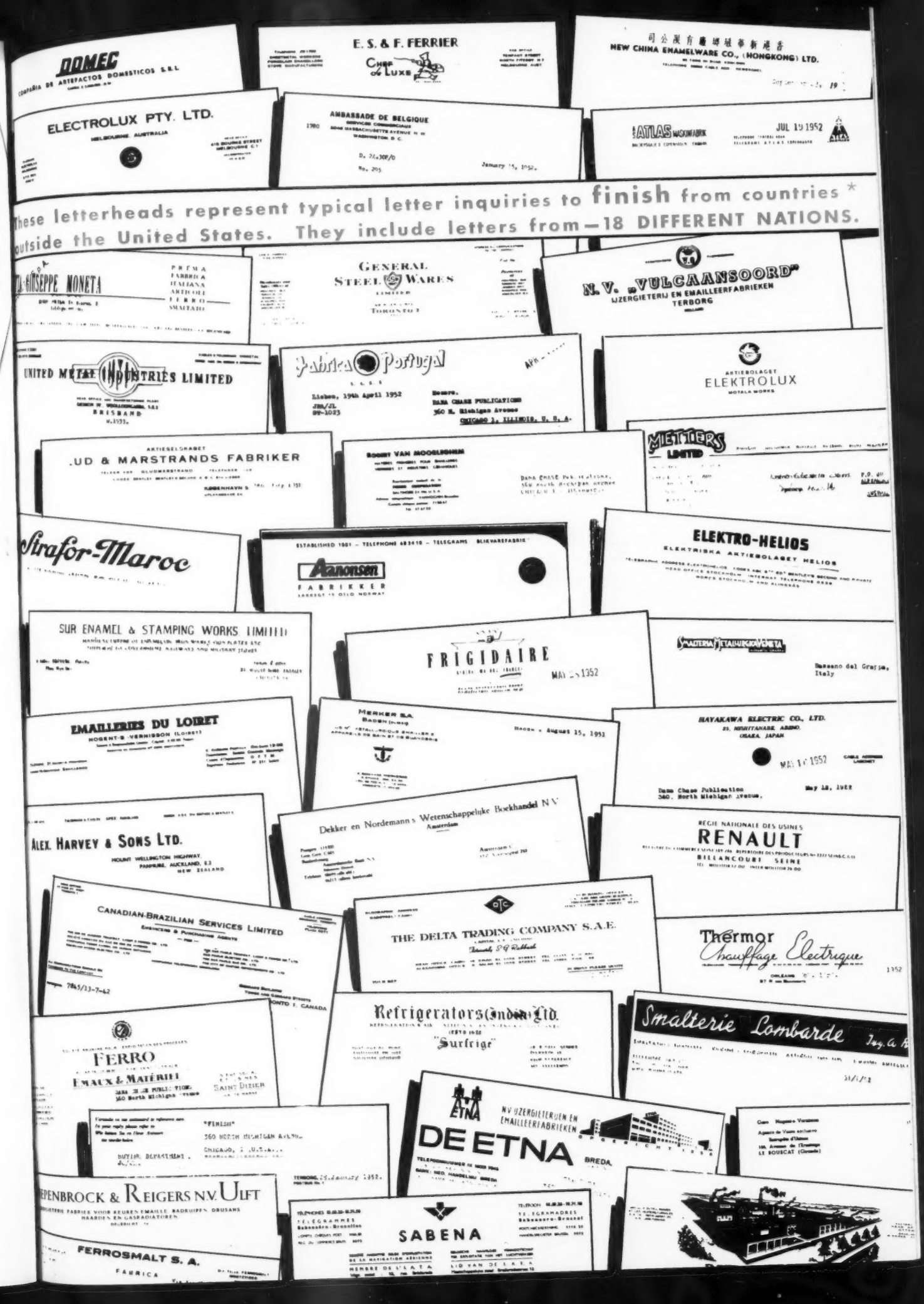
These letterheads represent typical letter inquiries to finish from countries outside the United States. They include letters from—18 DIFFERENT NATIONS.
DOMEC
COMPAÑIA DE ARTEFACTOS DOMESTICOS S.R.L.
E. S. & F. FERRIER
Chef de Luxe
NEW CHINA ENAMELWARE CO., (HONGKONG) LTD.
ELECTROLUX PTY. LTD.
MELBOURNE, AUSTRALIA
AMBASSADE DE BELGIQUE
ATLAS MASKINFABRIK
JUL 19 1952
GENERAL STEEL WARES
LIMITED
TORONTO 2
N. V. "VULCAANSOORD"
IJZERGIETERIJ EN EMAILLEERFABRIEKEN
TERBORG
UNITED METAL INDUSTRIES LIMITED
BRISBANE
Fabrica Portugal
Lisbon, 19th April 1952
Messrs.
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360 N. Michigan Avenue
CHICAGO 1, ILLINOIS, U. S. A.
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LIMITED
Sirafor-Maroc
ESTABLISHED 1901 – TELEPHONE 683410 – TELEGRAMS BLIKVAREFABRIK
Aronsen
FABRIKKER
OSLO NORWAY
ELEKTRO-HELIOS
ELEKTRISKA AKTIEBOLAGET HELIOS
SUR ENAMEL & STAMPING WORKS LIMITED
FRIGIDAIRE
MAY 1352
SMALTERIA METALLURGICA VENETA
Bassano del Grappa, Italy
EMAILLERIES DU LOIRET
NOGENT-S-VERNISSON (LOIRET)
MERKER S.A.
BADEN (Switzerland)
August 15, 1952
HAYAKAWA ELECTRIC CO., LTD.
23, MIYAHARA, ABENO,
OSAKA, JAPAN
MAY 1952
Dana Chase Publications
360, North Michigan Avenue,
May 28, 1952
ALEX. HARVEY & SONS LTD.
MOUNT WELLINGTON HIGHWAY
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NEW ZEALAND
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Amsterdam
REGIE NATIONALE DES USINES
RENAULT
BILLANCOURT SEINE
CANADIAN-BRAZILIAN SERVICES LIMITED
ENGINEERS & PURCHASING AGENTS
TORONTO 1, CANADA
THE DELTA TRADING COMPANY S.A.E.
Thermor
Chauffage Electrique
1952
Refrigerators (India) Ltd.
"Surfrige"
Smalterie Lombarde
31/1/52
FERRO
EMAUX & MATÉRIEL
SAINT DIZIER
"FENESH"
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BUYER, DEPARTMENT
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NV IJZERGIETERIJEN EN EMAILLEERFABRIEKEN
DE ETNA
BREDA
Agence de Voyage exclusive
Bureau d'Union
LE BOUSCAT (Gironde)
TERBORG, 29 January 1952.
PENBROCK & REIGERS N.V. ULFT
EMAILLEERIJ FABRIEK VOOR RADIATOREN EMAILLE, RADRUIPEN, DRUSANS
HAARDEN EN GASRADIATOREN
FERROSMALT S. A.
FABRICA
SABENA
MEMBRE DE L'I.A.T.A.

"ROLLED ALLOYS, INC."

The formation of Rolled Alloys, Inc., formerly the Rolled Products Division of Michigan Steel Casting Co., has been announced by Paul Goetcheus, president of the new independent company. The former Rolled Products Division had been operative in the wrought heat resisting alloy field since 1944.

All personnel formerly connected with Rolled Products are now with Rolled Alloys, stated Goetcheus. He stated that the new company "will have greatly expanded facilities to better serve fabricators and consumers of rolled heat and corrosion resistant alloys." The firm is located at 4315 Bellevue Ave., Detroit.

AMANA EXPANSION TO TRIPLE HOME FREEZER OUTPUT

plant to have rated output exceeding 1000 units per day

A $3,500,000 expansion program that will more than double the size of its plant, and triple its production of home freezers, has been announced by Amana Refrigeration, Inc., Cedar Rapids, Iowa. The scheduled completion date for the expansion is October 1, 1953, said George C. Foerstner, executive vice president.

New buildings will add 200,000 square feet of floor space to the factory's present 170,000 square feet. Installation of new modern high-speed machines and tools will make possible increasing output by 300 per cent, with the total output exceeding 1000 freezers a day, Foerstner predicted.

Highlights of expansion program

Highlights of the plant expansion, embracing the most modern equipment, as outlined by Foerstner.

1. Eight high-speed presses to form doors and other large parts.
2. Installation of steel slitting, shearing and levelling facilities which will make it possible for freezers to be made from continuous 10-ton ribbons of coiled steel, direct from the steel mills.
3. A new *electronic finishing line* — believed to be the first used by a freezer manufacturer — will be completed in May, and immediately will make possible increasing output by 30 per cent.
4. Doubling of railroad car loading facilities from an 8 or 16-car capacity, and enclosing them, and the motor freight loading docks.
5. A new warehouse.
6. A new service building.
7. Expansion of assembly line facilities.
8. Enlarged employee welfare facilities, including a new soundproof cafeteria, new rest rooms and showers.
9. New engineering department offices.

JACK WARD TO GEAUGA

J. F. "Jack" Ward, formerly with The Dexter Company, has joined Geauga Industries, Inc., Middlefield, Ohio, as general manager of their plastics division.

UNIVERSAL QUALITY CONTROL MGR.

Morton L. Clark, president of Universal Major Electric Appliances, Inc., Lima, Ohio, has announced the appointment of George Salyer as quality control manager.

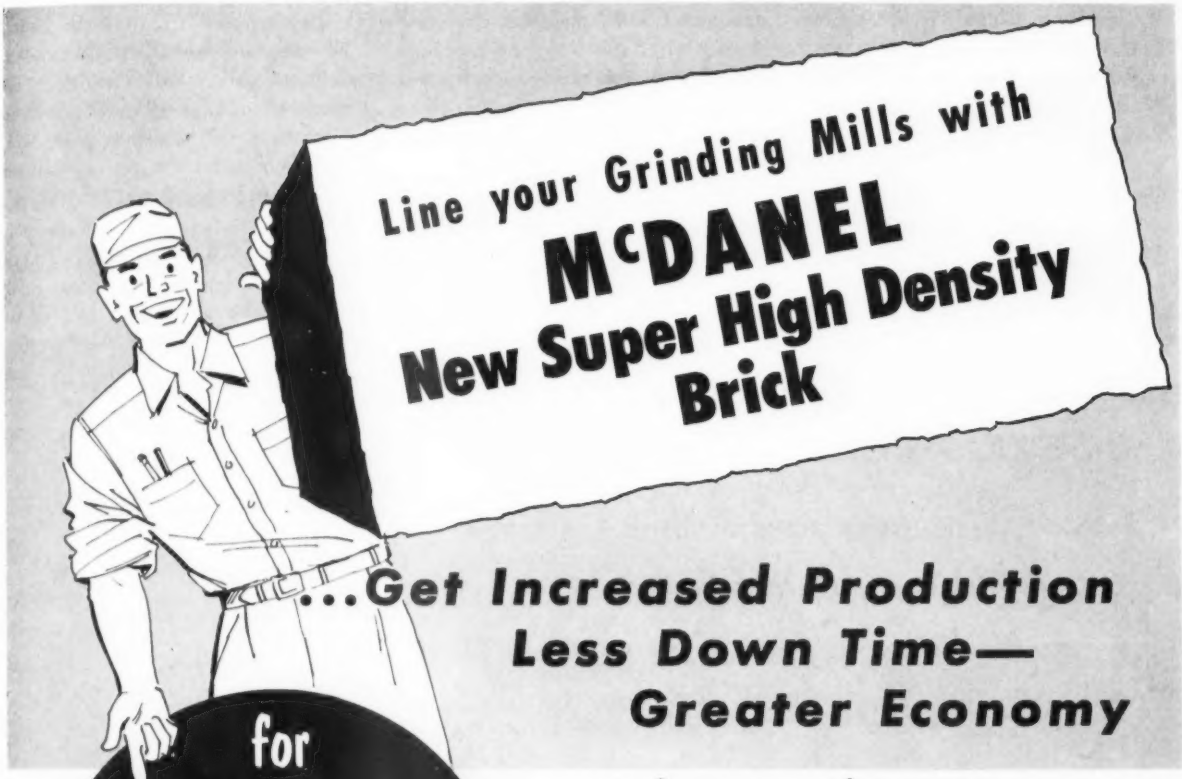
WALTER STEELE AWARDED NEMA 60-YEAR CERTIFICATE

Walter D. Steele, president of Benjamin Electric Mfg. Co., Des Plaines,

Ill., received a 60-year NEMA certificate at the recent annual meeting of the National Electrical Manufacturers Association. This is the first such recognition ever given in the history of NEMA.

Following graduation from Iowa State College in 1891, Steele was associated with Cast Iron Pipe Works, Cincinnati. In 1892, he joined Brush Electric Co. as an engineer in their Chicago office. In 1900, he joined

REMA exposition committee *— is shown making plans for 8th All-Industry Exposition to be held November 9-12, in Cleveland, under sponsorship of the Refrigeration Equipment Mfrs. Assn. Left to right: H. F. Spoehrer, Sporlan Valve; F. G. Coggin, Detroit Controls; Lud Emde, Temprite Products; Robert Cassatt, Fedders-Quigan; W. A. Siegfried (chairman) Superior Valve; and George E. Mills, REMA show director.*



for Hard—Tough Grinding — Less Wear and Contamination

Of course McDanel new High Density Hand Rolled Super Grinding Balls were used in the test run, thus assuring faster grinding, longer wear, plus greater economy of operation than you have ever known.

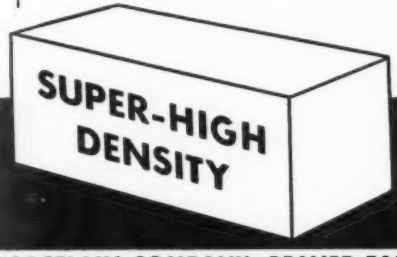
Here's the Proof:

In a test run over a period of one year in a 42 x 48 Ball Mill McDanel new Super High Density Brick showed two and a half times greater wearing quality than the regular Porcelain lining brick. Revolutionary? Yes, but true.

Here is a picture of a McDanel new Super High Density Brick taken from the mill at the end of the test run. Thickness of brick left 1 5/16".

Here is a picture of a regular Porcelain lining brick at the end of the same test run. Thickness of brick left ½".

Write for the McDanel Porcelain Products Catalog



McDANEL BRICK

McDANEL REFRACTORY PORCELAIN COMPANY, BEAVER FALLS, PENNSYLVANIA

Westinghouse, Church, Kerr & Co., in New York.

Steele was one of the organizers of Benjamin Electric Mfg. Co. in 1901, but had no active connection with the company until 1907, when he was named vice president in charge of sales and manufacturing activities. Since 1928, he has been president. Benjamin Electric was represented at the organization meeting of the Associated Manufacturers of Electrical Supplies, a predecessor of NEMA.

A REVIEW OF WOMEN'S PREFERENCES FOR MODERN KITCHENS*

Homemakers want big kitchens, modern yet homey, with both dining and laundry facilities, according to a report released by the advertising research department of *McCall's* magazine. Based on an analysis of 5000 entries selected from nearly 20,000 submitted in McCall's "My Kitchen Contest," the report is entitled "My Kitchen" and provides detailed information on women's plans and preferences for home appliances, kitchen equipment and furnishings.

The typical kitchen will be well stocked with modern appliances, including a range, refrigerator, probably a water heater and two of the three newer appliances (dishwasher, waster disposer or freezer). Walls will be light yellow or green, with red grey floor, red countertops and white or natural wood cabinets. The kitchen will contain four or five electric housewares, including a mixer, toaster and ventilating fan. Basic equipment will include both aluminum utensils and stainless steel copper-bottom pots, and, in most cases, a pressure cooker.

*See complete report "*What 20,000 Women Want in Their Kitchens*", July, 1952 *finish*.

HOT TEA FROM A REFRIGERATOR?

Your customers saw Arthur Godfrey and Tony Marvin do it . . .

on the Fiberglas TV-Radio show, "ARTHUR GODFREY TIME"

GODFREY:
"Three quarters of an hour ago, Tony heated a pot of water, wrapped it in Fiberglas* Insulation, and put it in the refrigerator."

MARVIN:
"That's quite correct, sir. And now we'll make you some steaming hot tea with it."

GODFREY:
"I hope it's hot. Remember, the inside of that refrigerator is at least 140 degrees colder than that water was."

GODFREY:
"Wow! I'll say it's hot. It's still steaming. You see how Fiberglas Insulation keeps heat where heat belongs and cold where cold belongs. That's why leading manufacturers use it in ranges, refrigerators, water heaters and freezers. Ask your appliance dealer about it."

Now, more than ever,
A swell feature to have . . .
A swell feature to sell . . .

OWENS-CORNING FIBERGLAS CORPORATION
Dept. 109-B, Toledo 1, Ohio

FIBERGLAS INSULATION MADE BY OWENS-CORNING FIBERGLAS CORPORATION · TOLEDO 1, OHIO — FIBERGLAS insulated

*FIBERGLAS is the trade-mark (Reg. U. S. Pat. Off.) of Owens-Corning Fiberglas Corporation for products made of or with fibers of glass.

VAN DERAU ON PITTSBURGH ACS SECTION PROGRAM

C. L. VanDerau, works manager of Westinghouse Electric Corp. plants in Mansfield, Newark and Columbus, Ohio, will discuss "Building for the Future" at the February 10 meeting of the Pittsburgh Section of the American Ceramic Society. The meeting will open with dinner at the Royal York Hotel, and will continue in the Mellon Institute auditorium.

GLIDDEN PURCHASES EAGLE-PICHER PAINT PLANT

Purchase of the Eagle-Picher paint plant in Atlanta, Ga., by The Glidden Company and plans for doubling its capacity were announced by Adrian D. Joyce, Glidden board chairman. Eagle-Picher will cease manufacture of paints and varnishes.

"Purchase of this highly-efficient Atlanta plant, which is only five years old, will enable the Glidden Company to better meet the demand for our products in this progressive, rapidly growing area," Mr. Joyce said. "Its acquisition will also ease the pressure of our manufacturing facilities in New Orleans, which are being

taxed to capacity," Joyce added.

Glidden has purchased an additional five-acre tract of adjoining land for construction of a new office and finished stock warehouse.

JENSEN SALES MANAGER

F. V. Jensen, president of Jensen Specialties, Inc., Detroit, has announced the appointment of Burtron

Zook as sales manager for their line of industrial ovens and heating equipment. Zook has served Jensen as a sales engineer for the past seven years.

PENNSALT APPOINTMENTS

Philip C. Staples has been appointed Chicago district sales manager of the industrial chemicals department of Pennsylvania Salt Mfg. Co., succeeding John C. Hampson, who is now in the Philadelphia office as a product supervisor in the same department.

Pennsalt also announced that Henry S. Rondeau and the Cleveland Industries Co. have been appointed agents for corrosion engineering products in Ohio and northern Kentucky.

NEW EDITION OF ASTM STANDARDS ON PAINT, ETC.

The American Society for Testing Materials has announced that the eighth edition of "ASTM Standards on Paint, Varnish, Lacquer and Related Products" has been published and is available at $5.75 per copy.

The 800-page book provides in convenient and up-to-date form each of the more than 200 specifications, tests, and definitions issued by ASTM through the work of Committee D-1.

1953 SYMPOSIUM ON ADVANCES IN INDUSTRIAL FINISHES

A second short course in the fundamentals of "*Paint as an Engineering Material*" will be sponsored by the Department of Chemistry and Chemical Engineering of the Case Institute of Technology, Cleveland, Ohio. The meeting is planned for March 30 and 31 and April 1.

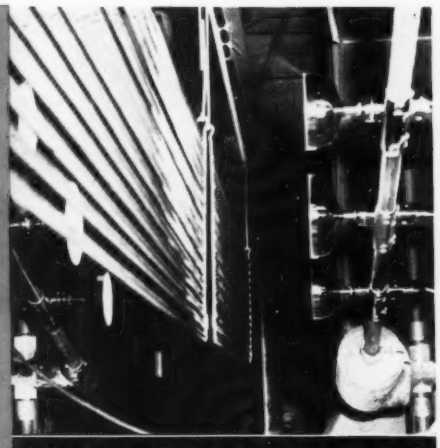
The purpose of the symposium is to review the theory and practice of coatings engineering with respect to

to Page 95 →

PAINT MILEAGE STEPPED UP

250%

with the Ransburg NO. 2 PROCESS



The Graber Company in Middleton, Wisconsin, uses the Ransburg No. 2 Process to good advantage in the production of curtain rods and drapery hardware.

● Using an automatic spray finishing system, the Graber Company formerly finished 750 to 1,000 feet of curtain rod per gallon of paint.

NOW, with the unmatched efficiency of the No. 2 Electro-Spray Process, 3,500 feet of rod are painted with one gallon of paint . . . an increase of 250% over the former automatic spray method. Too, they're getting a more uniform coating with practically no rejects. Maintenance and clean-up is only one-third of former needs.

This is another, on-the-job-example of what Ransburg No. 2 Process is doing on production lines all over the country. Want to know more about the Ransburg No. 2 Process? Write for our brochure containing data and detailed information on numerous installations.

Electrostatic Painting Processes

RANSBURG ELECTRO-COATING CORP

Indianapolis 7, Indiana

RANSBURG

ICEBERG FREEZER HAS DRAWERS

Iceberg Freezer Corp. is offering an upright drawer-type home freezer, according to J. M. Friedman, president. The freezer is said to be similar in principle to the commercial unit used in frozen food locker plants since 1937.

ROLL NAMED VICE PRESIDENT OF BETZ CORPORATION

R. C. "Cal" Roll, formerly with Speed Queen Corp., Algonquin, Ill., has joined Betz Corporation, Ham-

mond, Indiana, as executive vice president. Betz produces components for refrigeration products.

ROBERTSHAW-FULTON APPT.

Frank H. Post, sales manager, Robertshaw Thermostat Division of Robertshaw-Fulton Controls Co., has announced that M. F. Grace is now in charge of a newly-created sales territory consisting of Oklahoma, Texas, Arkansas and Louisiana.

Home laundry meeting

→ *from Page 44*

"Today we stand on the brink of full socialism. Businessmen whose records prove they can successfully operate a business have been in the back row these past two decades. We are at a point where sound business men have a chance. We must make the best of it for the welfare of all. The Eisenhower election was not an end in itself; it meant that American business had won a victory over the do-gooders, the socializers and the pinkos," concluded Hazen.

Outlook for future in home appliance industry

(Continued from page 35)

names that those sales will continue at high levels? Are advertising and selling plans for the future based upon a determination to "manufacture" sufficient customers to absorb anticipated production? . . .

Many conditions are beyond our control. There are parts of our economy both here and abroad which affect the economic climate under which we operate and will have to operate in 1953 and 1954. About them we can do little. But, come what may, there is much that we *can* do as masters of our own activities.

1. We can proceed with a determination to improve our products, to broaden product lines.

2. We can study our markets and our marketing processes.

3. We can increase the determination to manufacture more customers for our products through more frequent and more efficient advertising and promotion.

If we do these things intelligently, devotedly and consistently, we can ask ourselves, "*What about our future?*" and get the unchallenged answer, "*Boy, it looks good!*"

Adapted for finish *from an address before the Institute of Cooking and Heating Appliance Manufacturers.*

The outlook in the gas appliance field

(Continued from Page 36)

Gas heat is being installed in seven out of ten new homes where the fuel is available. And in existing homes vast numbers of conversion burners are being installed, with gas replacing other fuels. Conversion burner shipments during the first half of 1952 were 18 per cent above 1951, spurted in the third quarter to 62 per cent above the same 1951 period, and seem likely to continue to rise sharply this year.

The trend to gas for house heating is an important factor in considering the outlook for all gas appliances. It is significant that in gas-heated homes families tend to add other members of the gas appliance family. Hence, the trend to gas heat in both public and private housing means a continuing expansion of the market for all domestic gas appliances.

Finishing parts for central heating units

(Continued from Page 32)

the degreaser tank. Five minutes at 320° F. vapor temperature cleans and brightens the panels. All oil is thoroughly removed, leaving the panel surface perfect for painting.

The degreaser tank is nine feet deep and six feet wide, with a seven-foot vapor line. Three 6-kw immersion heaters, installed one inch above the bottom, keep the tank temperature at a pre-set degree.

After degreasing, the large furnace panels are hung on the conveyor and move on to the spray booth for a smooth finish coat. The spray man works quickly and efficiently under illumination from three 3-lamp explosion-proof fluorescent fixtures.

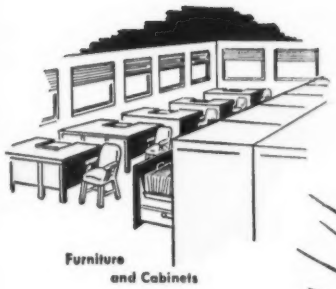
New infra-red oven used

Panels then enter the new infra-red oven which contains 320 infra-red lamps of 250 watts each. Lamps are installed in 22 individually fused banks, each bank with its own switch. Angled arrangement of lamps produces a "billiard ball" action of the heat rays, a bouncing pattern that distributes a uniform 450°F. temperature over every side, surface and edge of the work. The finish is really baked-out.

Time in the oven for average work

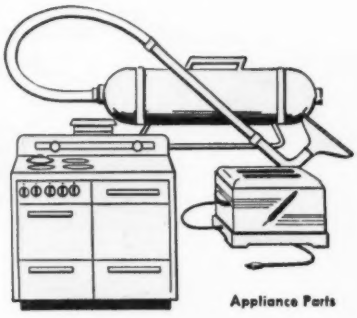
Roofing

Signs and Labels

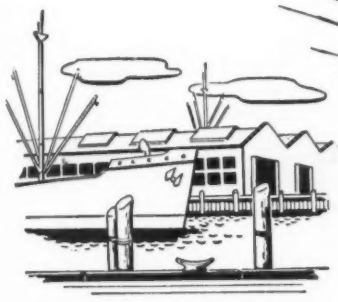


Furniture and Cabinets

NEW HORIZONS for ALUMINUM



Appliance Parts



Marine Applications and Many Other Uses

now made possible with **DU PONT VITREOUS ENAMEL**

Get all the advantages of aluminum— in colors that help your product sell better

EASE OF FABRICATION

WIDE COLOR APPEAL

DURABILITY

INCREASED STRENGTH

EASE OF APPLICATION

The remarkable properties of Du Pont vitreous enamel for aluminum permit a new, wider use of lightweight aluminum alloys. This outstanding protective finish enables you to take advantage of aluminum's desirable features in a variety of structural and decorative applications. And Du Pont vitreous enamel adds a wide color appeal to your household and industrial products—gives them another important sales advantage.

Vitreous enameled aluminum can be sheared, sawed, drilled and punched without damage to the coating. Costly prefabrication is eliminated because standard size enameled sheets can be cut to size on the job.

Almost unlimited range of colors and degrees of surface gloss available . . . can be produced in multi-color effects by masking, spray or screen stencil processes.

Du Pont vitreous enamel for aluminum is lightfast . . . displays excellent resistance to corrosion, abrasion, thermal shock, impact and flexing . . . has a high dielectric strength.

A standard thickness coating of vitreous enamel increases the rigidity of sheet aluminum as much as 60%!

Vitreous enamel is readily applied by ordinary enameling and firing procedures.

FOR MORE INFORMATION SEND FOR YOUR FREE COPY OF THIS BOOKLET

Vitreous enamel for aluminum is fully described in this free booklet—just fill out and send in the coupon below.

DU PONT
VITREOUS ENAMEL
FOR ALUMINUM

DU PONT

BETTER THINGS FOR BETTER LIVING
...*THROUGH CHEMISTRY*

E. I. du Pont de Nemours & Co. (Inc.)
Electrochemicals Department, Wilmington 98, Delaware

Please send me a free copy of your booklet on Du Pont Vitreous Enamel for Aluminum. I am interested in enameling the following types of work_____

_____

*Name*_____ *Position*_____

*Firm*_____

*Address*_____

*City*_____ *State*_____

is only five minutes. Overhead fan ducts remove 36,000 cubic feet of paint fumes per minute. Time for the entire finishing process is only 15 minutes.

There is no delay after baking. After the panels emerge from the oven, they are ready for assembly and packaging.

We haven't replaced a lamp in the oven's three months of operation. The oven design incorporates dummy panels where we can easily add more lamps if we should need more heat.

New stainless steel widens design possibilities

(Continued from Page 20)

4. Heat 5 minutes at 1750° F., and air cool.
5. Heat 90 minutes at 1400° F., and air cool.
6. Check and straighten.
7. Heat 30 minutes at 950° F., and air cool.

(Steps 2, 3 and 4 may be eliminated on material which can be finish formed in the "as received" condition).

In reference to sequence operation No. 6, "Check and Straighten," it was found that the material has pronounced work-hardening tendencies after the 1400° F. heat treatment, and that straightening in a stretch press or by stretch forming is impossible. Consequently, straightening has to be accomplished by hand, or by re-hitting in the case of drop hammer parts.

Location of holes and cutouts

Location of rivet holes and cutouts is best done in the fully hardened condition since the material "grows" 0.36 — 0.42 per cent during the first 1400° F. anneal. During the 950° F. precipitation heat treatment, a further slight growth or shrinkage occurs, generally from plus-or-minus 0 to 0.05 per cent. The total dimensional change is inconsistent from heat to heat, and varies with the direction in which the material was rolled. This makes it impractical to precision locate holes and cutouts prior to heat treatment.

Dimpling

It was found that dimpling of 17-7PH presented another problem, and in this case the heat treatment had to be varied so that the material could be dimpled with available equipment. It is obvious that dimpling had to be done in the full hard condition, after location of the rivet holes and cutouts, but with the material at its ultimate attainable physical properties, it was too hard for available dimpling equipment. To offset this difficulty, temperature during the second or precipitation heat treatment was reduced to 775° F., with soaking time remaining the same 30 minutes. This resulted in a reduction of ultimate tensile strength to a minimum of 160,000 psi, and yield strength to a minimum of 130,000 psi. In this condition, satisfactory dimples could be obtained.

Welding

Proper cleaning prior to spot welding required intensive investigation. It was soon determined that available pickling solutions would not produce a satisfactory surface condition. Rather than install specialized solution facilities, mechanical cleaning was tried. It was determined that fiber or stainless steel brushes could be used for removing the heat treat scale from thin material and produce a clean welding surface. Heavier gauge material (.045″ gauge and over) could be effectively cleaned by sand blasting. The best surface, however, both from the standpoints of cleanliness and subsequent corrosion resistance, was obtained by electro-polishing. In this process, from 0.001″ to 0.002″ of material is removed. Sand blasting cannot be used on thin material due to warpage and the creation of "cans" which are difficult or impossible to remove.

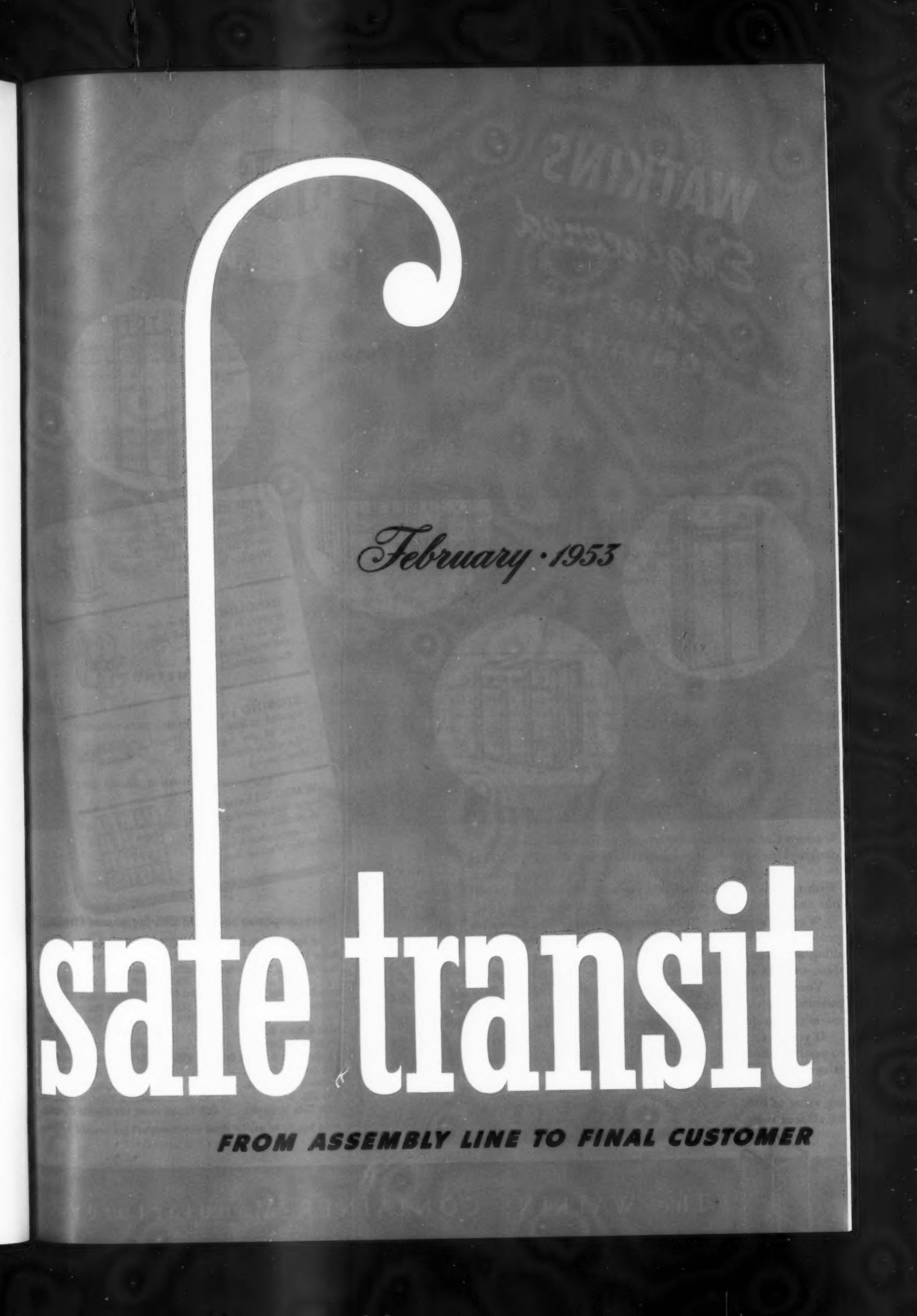
17-7PH can be spot welded to itself as well as to 18-8 stainless with good results. Spot welding must be accomplished at the 1400° F. annealing heat treatment, or with the material in the full hard condition. When spot welding is done after the 1400° F. heat treatment, the final 950° F. precipitation heat treatment must be given to the entire assembly.

Both conventional arc welding and the inert gas shielded arc process can be used with 17-7PH. With these techniques, however, highest physicals are obtained when the material is welded in the annealed or "as received" condition. Here again a third heat treatment must be used. The welded assembly must first be heated for 5 minutes at 1750° F., air cooled, then subjected to the regular two-step heat treating cycle.

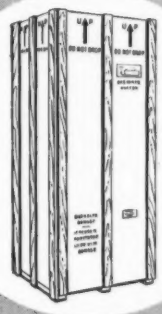
B. P. Planner noted during his investigations on the new alloy that hardness conversion tables are of little use in determining the exact condition of the material. At best, such tables could be used only to determine whether the material was in the "as received" or annealed condition, or whether it was in the full hard condition. In the annealed condition, the hardness reading should be Rc 34 or lower; in the full hard condition this reading is Rc 40 or over.

Another warning is to avoid the use of sandblasting on any thin material. Warpage induced by this cleaning process, especially after the 1400° F. heat treatment or when the material is in the full hard condition, is almost impossible to remove. During the research work, it was found impractical to use sand blasting on sheet stock thinner than .045-inch gauge.

This new stainless steel alloy is finding many uses in the design and fabrication of strong yet light weight and highly corrosion-resistant parts. It is particularly fitted to many applications in the aircraft industry. Compound curvatures, complex forming, and deep drawing is easily accomplished with the material in the annealed condition. High strength is then attained by heat treatment. But as is usual in most cases, the processing and manufacturing techniques employed by individual companies must be varied to fit the requirements of the new alloy. This will require some forethought and research. But this is necessary to obtain optimum results.


February · 1953
safe transit
FROM ASSEMBLY LINE TO FINAL CUSTOMER

WATKINS *Engineered* SHIPPING CONTAINERS

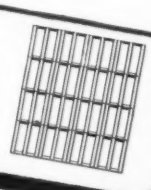


ASSEMBLY is speeded up with this easy-to-handle container. The assembly crews are all for packing the Watkins Way.

HANDLING shocks in the factory, in transit, and during delivery are resisted by the wood cleats, glued tube mat construction.

STORING problems are reduced to a minimum because of the 3-section design which provides for flat, close nesting.

STACKING is easy and safe, due to the supporting strength (minimum 4 tons on most containers) that is *engineered* into the Watkins design.



Watkins Containers are *Engineered* containers—scientifically designed for *light weight* without sacrificing the STRENGTH factor so important for the safe delivery of your product. With a Watkins Container you get stacking strength (without distortion) plus a high degree of shock resistance.

Watkins *engineered* Containers give your product *complete* protection—protection from the hazards of all normal handling and transportation—plus protection against dirt and dust, and the accidental scratching of fine finishes.

You can get 100% protection in a container that is 75% assembled when it arrives at your plant. And completing the assembly is a quick and easy job on the packaging line.

If you haven't shipped "The Watkins Way," you owe it to your finished products to try this cleated, corrugated container soon.

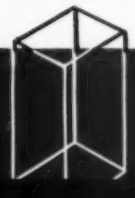
When you change to Watkins, you can use the advertising value of the "Traveling Billboard"—a two-color message on all four sides.

THERE IS A WATKINS CONTAINER MADE NEAR YOU

These companies build WATKINS *Engineered* CONTAINERS

Cornell Paperboard Products Co. .... 1514 E. Thomas Ave., Milwaukee, Wis.
Cozier Container Corp. ..... 446 East 131st Street, Cleveland, Ohio
Crate-Rite Mfg. Corp., Division of Pacific Ports Ind. Inc. ..... 10901 Russett Street, Oakland, California
Dura-Crates, Inc. ..... 940 East Michigan Street, Indianapolis, Indiana
General Box Co. ..... 1825 Miner St., Des Plaines, Illinois, and 16th and Maple Sts., Louisville, Kentucky
Hemb & Martin Mfg. Co. ..... Watseka, Illinois
Illinois Box & Crate Co. ..... 811 Center Street, Plainfield, Illinois
Kleckhefer Box & Lumber Co. .... 1715 West Canal Street, Milwaukee, Wis.
Lane Container Corp. ..... 10212 Denton Road, Dallas, Texas
Lewisburg Container Co. ..... 243 Singer Street, Lewisburg, Ohio
Love Mfg., Inc., ... 608 South Commerce Street, Wichita, Kansas
Utility Crate Corporation .... 1985 E. 16th Street, Los Angeles 21, California

—an inquiry to any of these companies will get prompt attention—



The · WATKINS CONTAINER · Manufacturers

safe transit

A monthly trade publication section devoted to improved packaging and shipping and materials handling practices in the home appliance and allied metal products field.

Plant experience information for all executives and plant men interested in the problem of packaging and shipping improvement and loss prevention.

Complete information on the National Safe Transit pre-shipment testing program for packaged finished products, and detailed progress reports of divisions and sub-committees of the National Safe Transit Committee.

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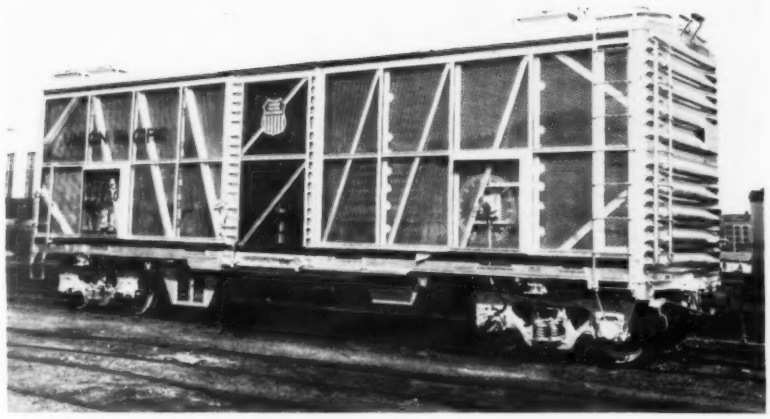
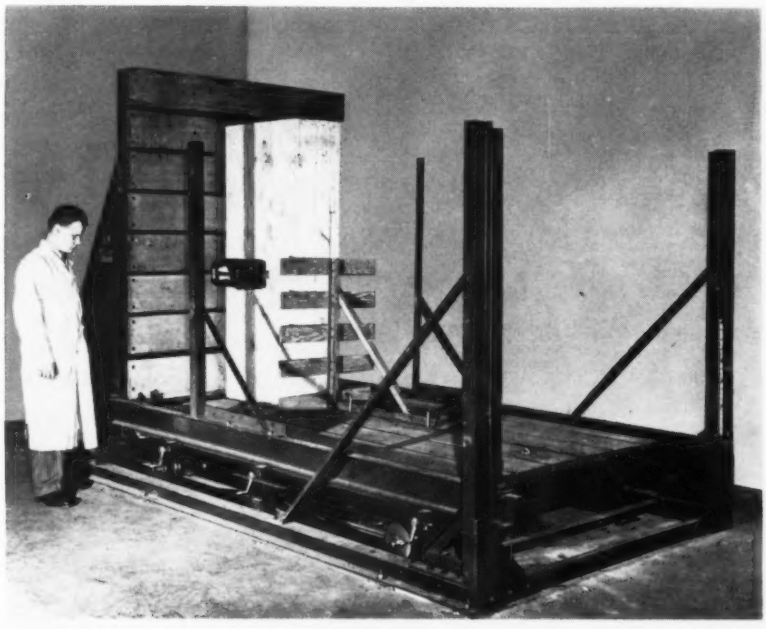


This transparent box car — *is no new style setter in freight car construction, but is Union Pacific's latest step in a campaign to reduce freight damage. The car with a transparent side is touring the railroad's 10,000 miles of line so that yard and train service personnel can watch the effect of switching and other impacts on loads in box cars. The car will also be used to check the efficiency of various types of loading methods and bracing. The car also features, near the right end, a 3-foot wide speedometer to register speed at time of impact.*

NST control laboratory — *for evaluating testing equipment — has been designated as the United States Testing Co., Inc., of Hoboken, N. J. The National Safe Transit Committee announced that the control laboratory will serve as the independent evaluating agency for testing equipment seeking approval under the National Safe Transit Program. Photo shows vibration testing machine in operation in U. S. Testing's main laboratories, in Hoboken, New Jersey.*



You Are Invited To Atten

AN INDUSTRY-WIDE SAF TR

presentin

"SAFE TRANSIT - - A

WHERE: Palmer House
Chicago, Illinois

WHEN: Monday, March 16, 1953, starting at 10:00 A.M.

WHO'S INVITED: Representatives of Finished Product Manufacturers (Sales Executives, Packaging & Shipping Men, Packaging Engineers, Traffic Managers and Quality Control Men — all others interested in the Safe Transit of packaged products); also Representatives of Carriers, Container Firms, Materials Handling, Packaging Laboratories and Government Packaging Engineers.

WHAT YOU SHOULD DO: Send in the Reply Coupon, in the lower right hand corner, to the National Safe Transit Committee, 1346 Connecticut Avenue, N.W., Washington 6, D. C.

PRE-TESTED
SAFE TRANSIT
SHIPMENT
The manufacturer certifies that this PACKAGED PRODUCT meets the pre-shipment testing standards established by the National Safe Transit Committee and will withstand NORMAL transportation and handling hazards.
NATIONAL SAFE TRANSIT COMMITTEE
1346 Conn. Ave., N. W. Washington 6, D. C.
MAKE
SAFE HANDLING
YOUR JOB!

THIS SAFE TRANSIT LABEL IS A SALES LABEL TOO!

IF THE Safe Transit of appliances, radio, television and similar finished products is a primary concern to you and your company, you will want to attend the Industry-wide Safe Transit Meeting to be held at the Palmer House, in Chicago, on March 16, and devoted to the theme, *"Safe Transit — A Sales Tool for You."*

This one-day conference has been programmed to show you how the National Safe Transit Program operates and how it can be made a vital part of any sales, sales promotion, or public relations program. A 30-minute color-sound film will show and tell you how the program works, and the background of the Safe Transit Tests. Leading representatives of industry, carriers, and container firms will tell you how Safe Tansit has been utilized as a sales tool, and how it can be of even greater benefit in the days to come.

Initiated over four years ago, the National Safe Transit Program has realized substantial reductions in transit damage for its participants. In that time, 20 leading associations have come forward to endorse the Program and the pre-shipment tests upon which it is based. Four leading carrier groups are active participants, and over 135 manufacturers and laboratories have been certified and are realizing positive results from this widely accepted testing program.

The National Safe Transit Program has demonstrated that it does reduce damage to products in transit — that it leads to product improvement and to better packaging and shipping facilities. *Now is the time to assign it the role of Sales Agent.* Plan to attend the Industry Safe Transit Meeting in Chicago on March 16, and learn how Safe Transit can be made a Sales Tool for you, also!

Plan to Attend!

PLEASE MAIL THIS COUPON AT ONCE

. . . .

TRANSIT CONFERENCE

. . . .

ales Tool For You"

PROGRAM

Presiding: R. F. Bisbee
Westinghouse Electric Corporation General Chairman, National Safe Transit Committee

10:00 A.M. **Address of Welcome**
by W. A. Barrows, President, Barrows Porcelain Enamel Co., President, Porcelain Enamel Institute

10:05 A.M. **"The National Safe Transit Program" —**
a full color and sound film with introduction by Dana Chase, Editor & Publisher, *finish* Magazine; Chairman, Educational Division, National Safe Transit Committee

10:50 A.M. **"How Safe Transit Has Aided our Company"**
E. H. Shands, Director of Engineering & Development, Geo. D. Roper Corporation, Chairman, Technical Planning Division, NST, Presiding

Five-Minute "Case Histories from Manufacturers"
Globe American Corp. — Clark Strayer
Tappan Stove Co. — G. L. Dobson
A. O. Smith Corp. — Waldo Higgins
Lindemann & Hoverson Co. — E. J. Thomes
Frigidaire Div., GMC — R. L. Spriggs

Five-Minute "Case Histories from Distributors"
Sears, Roebuck & Co. — representative
Georgia Power Co. — representative

11:30 A.M. **"The Carriers View Safe Transit"**
R. P. Carr, Frigidaire, Chairman, Carrier Coordinating Div., Presiding
Association of American Railroads — representative
American Trucking Association — representative
Railway Express — representative
Air Cargo — representative

12:00 Noon Luncheon
"Safe Transit as a Sales Tool for the Manufacturer"
E. Carl Sorby, Vice Pres., Geo. D. Roper Corp.

1:30 P.M. **"The Retailer Looks at Safe Transit"**
Joseph T. Meek, President, Illinois Federation of Retail Associations

2:00 P.M. **"Question and Answers"**
A Panel of Industry Representatives will answer questions from the floor

3:00 P.M. **"New Horizons"**
R. F. Bisbee, Westinghouse Electric Corp.

ADVANCE REGISTRATION COUPON

Send in this coupon NOW to aid Committee in its planning

National Safe Transit Committee -- 1346 Connecticut Avenue, N.W., Washington 6, D.C.

We expect to have _____ persons present from our organization at the NST Committee's Safe Transit Conference at the Palmer House, Chicago, on March 16, 1953. They are:

Name: Position:

_____ _____

_____ _____

_____ We are attaching additional names.

We are making our own hotel reservations, mentioning that we are attending the Industry Safe Transit Meeting.

Signed: _____

Company _____ Address _____

SAFE TRANSIT NEWS

NATIONAL SAFE TRANSIT COMMITTEE

DuPont Circle Building, 1346 Conn. Ave., N.W., Washington 6, D.C.

MARCH 16th SET FOR SAFE TRANSIT INDUSTRY MEETING

Everyone interested in Safe Transit will be looking forward to the Safe Transit Industry Meeting to be held at Palmer House, in Chicago, on March 16th. This one day meeting will be a power-packed, stream-lined presentation of the Safe Transit Program -- how it is aiding industry, carriers, and container firms, and how it can be of even greater benefit in the days ahead. Plan to attend!

SAFE TRANSIT FILM PROVES BIG HIT

All available prints of the new color film on the National Safe Transit Program were in full use during the months of December and January. Presentations were by industry, container firms, and carrier groups, and were held in all sections of the country and in Canada. The following are indicative of the comments received:

"... impressed with the work done by the Committee in furthering safety of packaged articles during transit and handling."

"... believe your film was very well done and will be invaluable in getting your National Safe Transit Program over to interested groups."

"... Those who saw the film greatly appreciate its contents and more fully realize the problems in handling."

"This provides an excellent sales tool to show our customers...explains how the program functions much better than words alone can do it."

Address all requests for the film to the National Safe Transit Committee, specifying the date of your planned showing and naming two alternative dates. Because of the demand all prints are being closely scheduled and your cooperation in returning the film promptly following your stated showing will be the important factor in meeting committments.

INTEREST IN SAFE TRANSIT GROWS

A leading manufacturer of sewing machines, another of television sets, and one of plumbing fixtures are among those currently studying the National Safe Transit test procedures with a view to adopting the NST Program. It is expected that 1953 will be a year that adds many more outstanding names to an already distinguished list of certified Safe Transit companies.

COMMITTEE NAMES CONTROL LABORATORY

United States Testing Company, Inc., Hoboken, New Jersey, a nationally recognized leader in the testing field, has been designated by the National Safe Transit Committee as its laboratory for evaluating testing equipment. In this newly established relationship the United States Testing Company, Inc. will serve as the independent evaluating agency for equipment seeking approval under the National Safe Transit Program.

The "two-way street" of NST

by R. P. Carr • FRIGIDAIRE DIVISION, GENERAL MOTORS CORP.; CHAIRMAN, CARRIER COORDINATING DIVISION, NATIONAL SAFE TRANSIT COMMITTEE

THE National Safe Transit Committee is a cooperative movement for reducing shipping loss and damage for major appliances and allied products. Since its inception it has been planned as a "two-way street" involving the cooperation of both shippers and carriers.

The program offers assurance to shippers that if they will pre-test their packaged products according to certain established procedure, their packaging cost and their shipment losses and damages will be held to acceptable minimums.

It is up to each shipper to decide whether he will use these test procedures, the program being entirely voluntary and implying no connection with tariffs, freight rates, claim procedure, or any other existent transit regulation. Paralleling the work of shippers is an equal opportunity for the carriers to improve handling by proper education of personnel and by keeping equipment in the best possible operating condition.

On the industry side of the street, NST has the backing of the eight leading associations representing the manufacturers of appliances and allied products, plus four associations of container manufacturers. Four leading technical and educational groups are also affiliated.

On the carrier side of the street are the three associations representing the Railways, the Truck Lines, the Airlines, plus the Railway Express Agency.

Carrier coordinating committee personnel

The Carrier Coordinating Committee consists of a representative of each of the transportation Associations, headed by a Committee Chairman appointed by NST.

Men who will head the individual educational committee for their respective carrier organizations include: Frank G. Gibson, Association of American Railroads; J. J. Toughey, Railway Express Agency; John M. Miller, American Trucking Associations, Inc.; and Emery F. Johnson, Air Cargo, Inc.

Each carrier organization representative on the Committee appoints a representative to head up his Educational Committee. This educational chairman contacts major carriers, or sections of the country, as the case may be, giving the carriers an outline and otherwise acquainting them with the plan, asking each to appoint a representative to work directly through him on NST projects.

A good many manufacturers who are members of NST are interested in knowing what the carriers are doing to parallel their efforts. The activities of this Committee will supply information through the monthly bulletin, *Safe Transit News*, and the trade press.

The monthly NST Safe Transit Bulletin is designed to assist carriers and manufacturers alike. Representatives of each carrier group are urged to contribute items to the bulletin. Likewise, the monthly bulletin is to be forwarded through the carrier representative of the committee, to the individual carrier representatives.

Carrier participation

The goal of our committee is to bring together information on the activities of the carriers and the shippers who are the members of NST, the objective being more safe transportation.

We asked the carriers to promote NST by the following methods:

(a) Encourage pre-testing of packages by using the NST manual, and enlisting shippers' participation.
(b) To show the NST film "Safe Transit."
(c) Reproduce and distribute the NST bulletin to their member carriers.
(d) Do more employee Educational Work on the principles of NST.
(e) Take an active part in the coming National Meeting, in Chicago, March 16th.
(f) Give us a report of their activities every three months, or more frequently if desirable.
(g) NST can then apprize the shippers of their activities through the NST bulletin.

There has been activity by each of the groups observed as follows:

(a) Each of the groups has expressed themselves as being solidly behind the NST plan, realizing its importance and the possible results of complete cooperation.
(b) The American Trucking Associations and Railway Express Agency have made use of our NST film.
(c) ATA and Railway Express Agency have both told us of their plans for reproducing the NST bulletin for distribution within their organization.
(d) We have noted in a number of railroads and the trucking lines house organs where they have used NST items supplied by the NST educational committee which we believe can be considered as employee educational work.
(e) Each group signified their intention of taking an active part in the National Meeting.

(NOTE: There has been no attempt in this report to record the standard and continuing activities of the carriers in the interests of better shipping.)

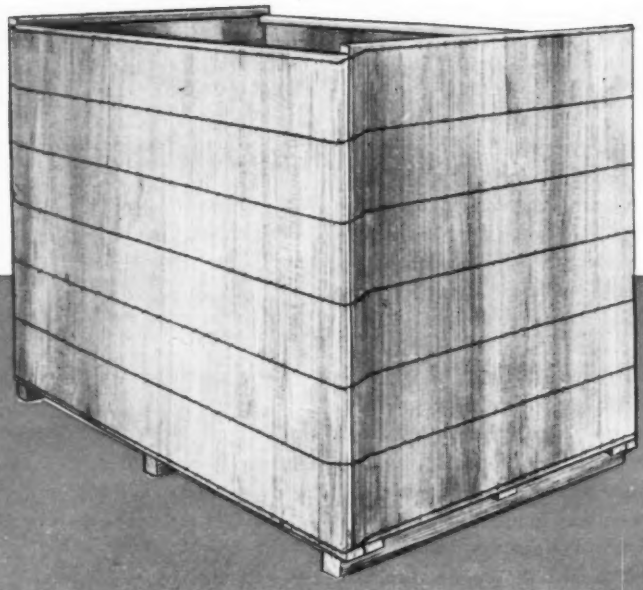
Individual carries are asked to make reports of their representatives of this Coordinating Committee periodically (every three months) showing the trend of their progress in preventing loss and damage, classifying losses into commodity groups as much as possible. Reports are to be forwarded to the Committee Chairman for forwarding to NST.

The final objective

The plan is one of prevention rather than cure of shipping damage, by standardizing on shipping tests

to Page ST-12 →

HOW WOULD YOU MOVE THIS PILE OF PARTS?



it's as costly as this ▷

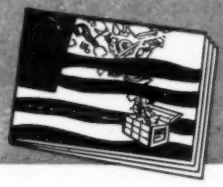
OR...

as efficient as this ▷

Generalift ★★★★★ PALLET BOXES

Better check today on this versatile, popular container. The Generalift Pallet Box and fork lift truck is a combination that will substantially reduce *your* materials handling costs! Picture at right shows how many manufacturers are also using Generalift Pallet Boxes for the more economical storage of parts and materials.

Write for your free copy of "The General Box." It illustrates and describes how manufacturers are cutting container costs.



AMERICA'S FINEST INDUSTRIAL PACKAGING LABORATORY

It is here where more efficient containers are born. We will be glad to study your problem and design a container that best meets your specific needs. Write for complete details.

General ★★★★★ BOX COMPANY

GENERAL OFFICES: 1823 Minor St., Des Plaines, Ill.

DISTRICT OFFICES AND FACTORIES: Cincinnati, Denville, N. J., Detroit, East St. Louis, Kansas City, Louisville, Milwaukee, Sheboygan, Winchendon. General Box Company of Mississippi, Meridian, Miss. Continental Box Company, Inc., Houston, Dallas

ENGINEERED SHIPPING CONTAINERS FOR EVERY SHIPPING NEED

- Wirebound Crates and Boxes
- Generalift Pallet Boxes
- Generalite Beverage Cases
- Cleated Corrugated and Watkins-Type Boxes
- All-Bound Boxes
- Corrugated Boxes

New educational color sound film tells the story of SAFE TRANSIT

NOW ready for distribution is a 30-minute, 16 mm. color-sound film on the National Safe Transit Program.

The NST film shows the test procedures in full and explains the test shipments which led to their adoption. Available to manufacturers, carriers and other interested groups, the Safe Transit Committee expects the film to be a valuable aid in disseminating nation-wide information on the National Safe Transit Program.

The Committee further feels that the film will give to management, and those directly responsible for the safe transit of products, a comprehensive picture of the standards and tests established for determining the "shipability" of *packaged products.*

Purpose of the film

The film explains the test procedures in full and the test shipments which led to their adoption.

Its purpose is to disseminate nation-wide information on the National Safe Transit Program to those groups concerned with the safe transit of their packaged products.

Background

The film was two years in the making, and test data was compiled from : (1) all methods of common Carrier — Railroad, Express, Trucks and Air; and (2) test shipments from East Coast to West Coast; Florida to Canada — using many test shipments.

On the scene locations of filming: Mansfield, Ohio; New York, N. Y.; Buffalo, N. Y.; Detroit, Mich., Springfield, Mass.; Pennsylvania Turnpike; Canadian National R. R. yards; Chicago, Illinois.

Interest in film

Foreign—Members of the French Packaging Institute (a group which represents every important industry in France) visiting in this country under the auspices of the Mutual Security Agency found the film extremely informative and helpful. The showing was arranged for them in New York, on October 24, by the Research Institute of America, Inc.

Carriers — Carrier groups are already showing considerable interest. American Trucking Associations, Inc. had a showing for approximately 120 members and guests of the ATA National Freight Claim Council, and scheduled the film for a West Coast meeting recently. Railway Express Agency plans to schedule three showings for a representatives meeting at Jacksonville, Florida.

Container laboratories — They have shown considerable interest in arranging showings for their personnel. Presentations have already been held by some, and in each case comment was good.

Manufacturers — Interest has been good and showings have been scheduled both by non-participants and certified companies. One leading manufacturer of major appliances has purchased two prints — one for use by the service department and the other for the sales department to use in promotional work.

Availability

Films may be purchased for educational and sales work by Certified Manufacturers. It can also be used effectively by Carriers and Container Groups for educational work.

How to obtain copies

Purchase and loan requests should be directed to the Washington Office of the National Safe Transit Committee.

Purchase price is $150.00; rental fee is $10.00 (to cover cost of outgoing postage, handling, checking, and cleaning of the film upon its return). Date of proposed showing and two alternative dates should be specified.

MAYTAG — "Our experience with the NST program has been completely satisfactory" — R. H. Thompson, gen. traffic mgr.

DIXIE FOUNDRY — "There is no question but what the results obtained have been extremely gratifying to us. Not only have we improved our packaging, but have improved our product" — S. B. Rymer, president.

GLOBE AMERICAN — "Our damage from January 1 through March 30, 1952, was reduced to 1 1/10%" — Clark Strayer, packaging and methods engineer.

WHAT CERTIFI

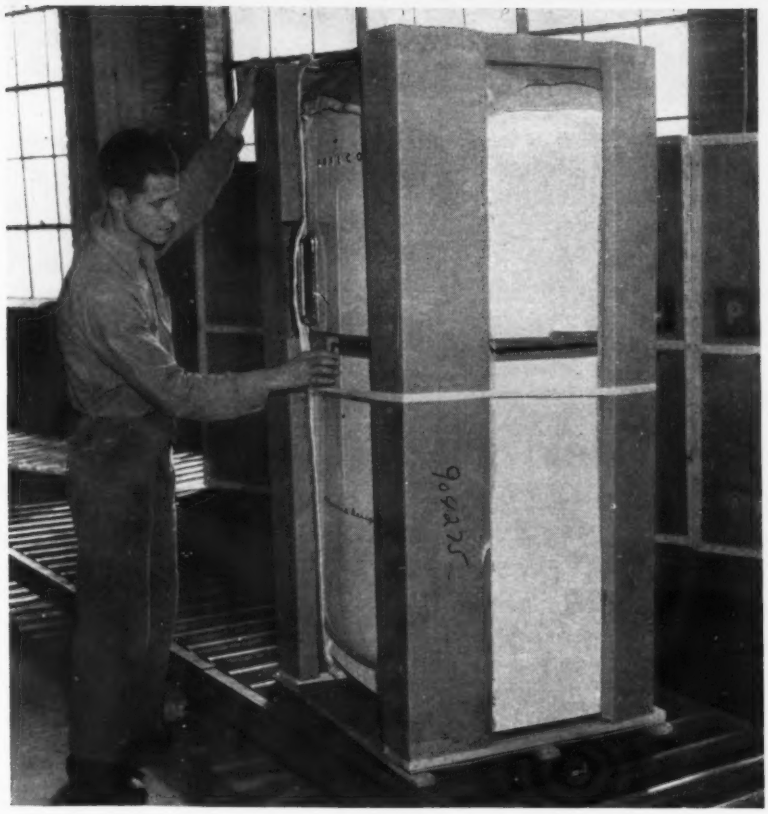
PERFECTION — "Since adopting Safe Transit we've cut shipping losses from 12% to less 3%. That's a 75% reduction" — William Day, engineer.

DAY & NIGHT—"Savings already
expenses which have been accumul

FIBMPANIES SAY

ransit NFER BROS. — "One of the most progressive
less ever taken to prevent ever-increasing transit
Day, ge and losses"—Carl Zeman, traffic manager.

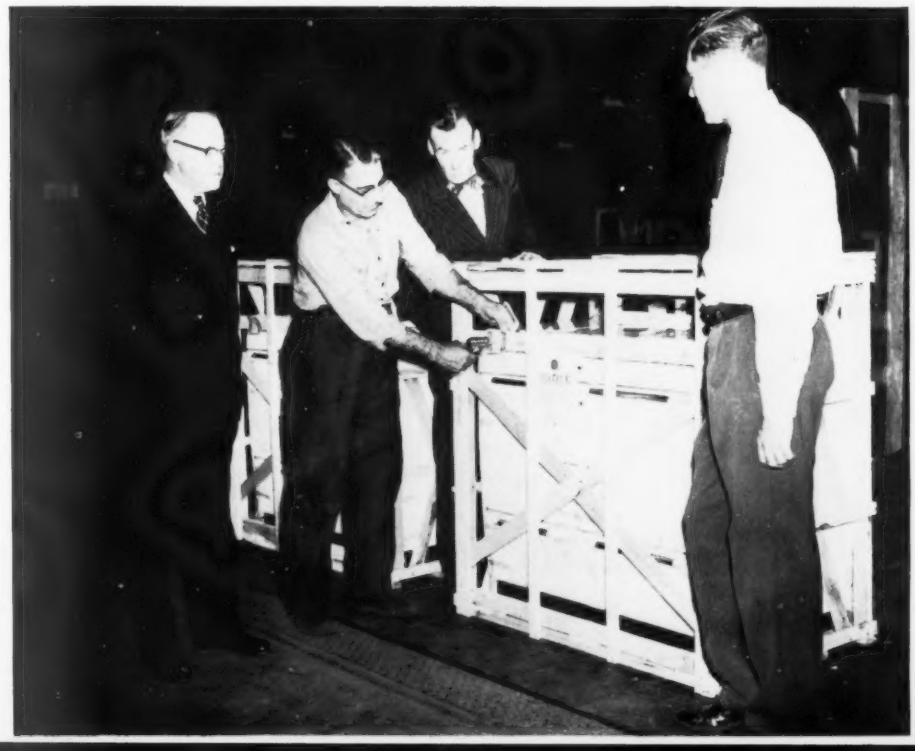
ready ve more than paid for the testing
ccumul R. Mottinger, chief process engr.



PHILCO — "Full implementation of NST program will result in a continued reduction of losses" — J. Gardner Crowell, pack. engr.

O'KEEFE & MERRITT — "We are very much in accord with the NST program, and find it of vital importance to all concerned that we become certified on our entire packaged output" — J. R. White.

FLORENCE STOVE — "NST pre-shipment testing has helped us greatly in standardizing our packaging, and in the maintenance of proper workmanship on packaging" — George E. Small, chief engineer.



A "two-way" street

from Page ST-7 →

that will determine whether the packaged product will stand transportation shocks. Efforts of manufacturers should be directed toward perfecting the packaged product for shipping and the efforts of the carriers toward lessening the transportation shocks in transit. The carriers have an equal part with the members of NST in accomplishing this objective.

N. Y. MARITIME ASSN. NAMES PLITT PACKAGING CHAIRMAN

The Maritime Association of the Port of New York has announced the election of W. Irving Plitt as chairman of the group's Packaging Committee. Plitt is vice president of Atlantic Mutual Insurance Co., and has served on the committee since its inception.

BALDWIN HEADS ACME STEEL UNIT-LOAD DEPARTMENT

John C. Bucuus, president of Acme Steel Products Division of Acme Steel Co., Chicago, has announced the appointment of W. A. Baldwin as manager of the unit-load department.

INTL. PAPER PLANS NEW PLANT ON WEST COAST

Plans for construction in Los Angeles of a new converting plant for the production of corrugated fibre shipping containers were announced by W. S. Snyder, manager, container division, International Paper Co., New York City.

"WHAD'YA MEAN—TAKES NERVE? HE AND THAT BARREL PASSED THE SAFE TRANSIT TESTS."

FORT WAYNE PAPER CERTIFIED BY SAFE TRANSIT COMMITTEE

Fort Wayne Corrugated Paper Co., Fort Wayne, Indiana, is the 21st laboratory to be certified by the National Safe Transit Committee.

GERRARD STEEL OPENS PRODUCT SERVICE SECTION

Gerrard Steel Strapping, Chicago, will open a new product service section for light, heavy duty and specialty products, it was announced by Harry G. Walter, president of the U.S. Steel Corp. division.

Responsibility in the new section, headed by Harry Reed, central district sales manager, will be divided between Martin M. Groark, in charge of light duty and specialty products, and R. G. Patterson, in charge of heavy duty products.

AMERICAN BOX WINS OHIO SAFETY AWARD NO. 3

For the third consecutive year, the title "Safest Woodworking Plant in Ohio" was awarded to The American Box Co., Cleveland, at the 22nd annual Greater Cleveland Industrial Safety Campaign banquet.

The award was presented to George Lukacs, chairman of the company's 8-man Plant Safety Committee which attended the banquet.

NST MAIL BAG

The National Industrial Traffic League

To NST Committee:

This will supplement my previous letter with respect to adding the name of The National Industrial Traffic League to the Cooperating Groups of your organization.

This is to advise that we shall be happy to cooperate in every way possible. We appreciate your thoughtfulness in asking us to join in this worthwhile movement.

L. J. Dorr
Executive Secretary
Washington, D. C.

Case symposium

→ *from Page 79*

some critical problems of specification and application of organic finishes, and with particular reference to the special circumstances that result from recent efforts to evaluate and use the newer types of synthetic resin finishes.

Topics to be considered:

1. Metal protection in severely corrosive environments.

2. Special problems of paint application, including: (a) Factors which influence the adhesion of organic coatings, and (b) Causes and remedies of other paint application faults.

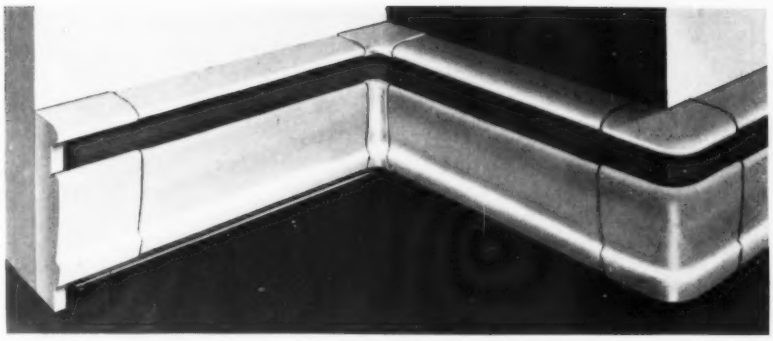
3. Testing of organic coatings: (a) Design and interpretation of experiments for field or service testing, and (b) Accelerated laboratory tests for prediction of service properties of coatings.

LATE NEWS

PAUL LUX HEADS LUX CLOCK INDUSTRIAL SALES

Robert W. Chrigwin, general sales manager, Lux Clock Mfg. Co., Waterbury, Conn., has announced the appointment of Paul Lux as industrial sales manager.

A graduate of Dartmouth, Mr. Lux joined the company as a sales representative in 1946, following three years as an officer in the Air Force. He assumed his new duties following a year as assistant sales manager.



At Intl. Air Conditioning Show — *in Chicago — a new type of "hidden heating" was displayed by The Trane Company. Streamlined in its styling, the Trane baseboard convector is adaptable to either modern or traditional rooms in homes and apartments as well as hotels, hospitals and offices.*

PRESSED METAL INSTITUTE SPRING TECHNICAL MEETING

The stamping industry's 4th annual Spring Technical Meeting, sponsored by the Pressed Metal Institute, will be held at Hotel Carter, Cleveland, Ohio, March 25, 26 and 27.

The 1953 program, as a tie-in with a national safety campaign being conducted by the PMI Safety Committee headed by C. Glenwood Rose, of Judson & Rose, Inc., includes a full day devoted to safety. The day's theme will be "*Safety at the Press*", and the morning session will be on "*Press Guarding.*" The afternoon panel will discuss "*Designing Safety into Dies,*" with J. I. Karash, of Reliance Electric Co., Cleveland, heading the panel.

The highlights of the opening day will include a comprehensive exhibit of the latest types of safety devices.

The second day will include the following subjects: "*The Right Press for the Right Job*" and "*Drilling, Tapping and Counterboring in the Stamping Plant.*"

The concluding day's sessions open with "*Work Simplification*" presented by Allan Mogenson, of New York City. The concluding session will be on "*Die Breakage and How to Minimize It.*"

Hommel service pins — *were presented to 32 employees of the O. Hommel Company recently by Ernest Hommel, president. Twenty men and women received 5-year pins, five were given 10-year pins; four received 15-year pins; one received a 20-year pin, and two others received 25-year pins.*

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HOTPOINT TO PRODUCE REFRIGERATORS BY NOVEMBER

John C. Sharp, president of Hotpoint Co., Chicago, recently stated that their plans to retool their former jet engine component factory for refrigerator production are proceeding on schedule. The company expects to begin pilot runs of new refrigerators in June, with full-scale production by November.

C. D. CLAWSON ON TV

C. D. Clawson, president of Ferro Corp., recently appeared on the "Meet the Boss" program which was broadcast by the DuMont network in the Atlantic Seaboard area.

GEORGE THORP DIES

George G. Thorp, 84, former president of the old Illinois Steel Co., died January 21 in Maple Bluff, Wis.

A steel industry pioneer, Thorp supervised the design, construction and operation of U.S. Steel's Gary Steel Works in 1906. He retired in 1935 when the Illinois company and the old Carnegie Steel Co. were merged as a U.S. Steel subsidiary.

33 MILLION HOUSING UNITS NEEDED IN NEXT 25 YEARS

America is faced with a requirement of over 33 million housing units during the next 25 years, according to Gen. John J. O'Brien, president of Gunnison Homes, Inc.